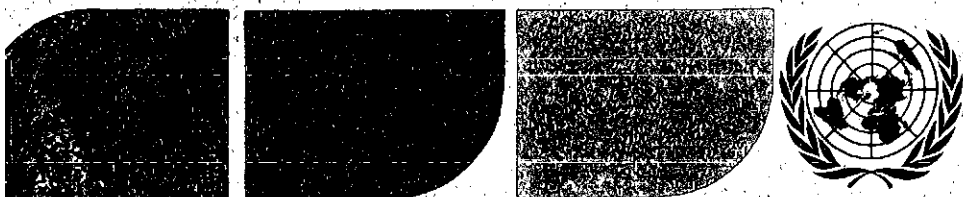


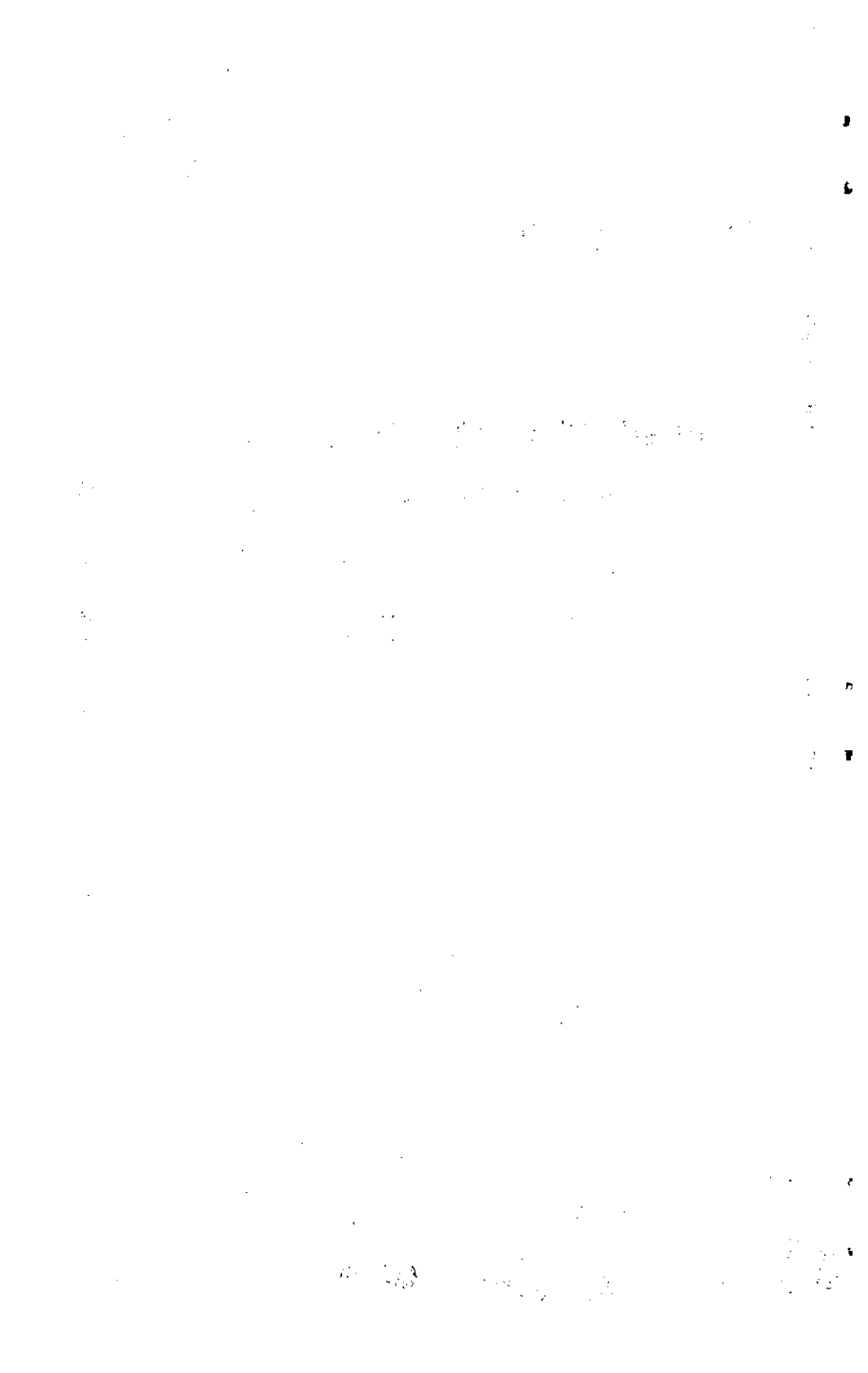
**BASIC CONCEPTS OF MARITIME
TRANSPORT AND ITS PRESENT
STATUS IN LATIN AMERICA
AND THE CARIBBEAN**



**cuadernos
de la cepal**



UNITED NATIONS





CUADERNOS DE LA CEPAL

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ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

UNITED NATIONS

Santiago, Chile, 1987

LC/G.1426
September 1987

This study was prepared by Mr. Tomás Sepúlveda Whittle, Consultant to ECLAC's Transport and Communications Division. The opinions expressed here are the sole responsibility of the author, and do not necessarily coincide with those of the United Nations.

Translated in Canada for official use by the Multilingual Translation Directorate, Translation Bureau, Ottawa, from the Spanish original *Los conceptos básicos del transporte marítimo y la situación de la actividad en América Latina*. The English text was subsequently revised and has been extensively updated to reflect the most recent statistics available.

UNITED NATIONS PUBLICATIONS

Sales No. E.86.II.G.11

ISSN 0252-2195
ISBN 92-1-121137-9

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SUMMARY

This study attempts to provide a comprehensive view of the basic aspects of international maritime transport, so as to furnish those who are not experts on this subject with general background which will permit them to gain an idea of the importance, needs and structure of the shipping industry, the current situation in this sector at the world and regional levels, and the factors that influence its development.

Transport is a service industry, an activity without which a country's trade, progress and very life would be impossible. The predominant place of shipping in world trade derives from the fact that seven-tenths of the earth's surface is covered by water, and therefore the vast majority of imports and exports use this very expeditious and cheap mode of transport.

With the exceptions of Bolivia and Mexico, over 90% of the international trade of all the countries of Latin America is carried by sea. In the 11 member countries of the Latin American Integration Association (LAIA) —Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela— international transport amounted to 432 million tons in 1983, 342 million of which were exports and 90 million imports. In 1985 the total was 476 million tons, with 381 million representing exports and 95 million imports. The importance of this mode goes beyond the mere volume of cargo moved, since freight expenditures in the LAIA countries —12 100 million dollars in 1982 and an estimated 10 000 million in 1985— exceeded the value of every foreign trade item in the region with the exception of petroleum.¹

In South America, a number of factors contribute to the supremacy of water-borne transport: the fact that development in these countries has tended to concentrate in coastal areas, the existence of natural obstacles, the fact that their main import and export markets are overseas, the relation between the length of the coastline of a country or a continent and its total area, problems with railway transport, deficiencies in highway systems, and the greater carrying capacity of ships as compared with other types of transport. However, shipping itself is also frequently contingent on external factors such as international conflicts, good or bad harvests, the weather, and economic growth or recession.

A merchant marine is not composed of ships alone, but also requires officers and crew, a commercial organization and mastery of the shipping business. Furthermore, the services of a national merchant marine are a basic instrument for a country's development and economic independence, and an indispensable tool for trade, industry, production and consumption. In addition to providing major aid to national defense in the case of conflict, a merchant marine is a creator of collective wealth whose contributions to a country's economy go far beyond the earnings derived from freight.

The success or failure of a shipping company depends to a great extent on the skill of its directors in managing the business, and to a large degree on the ability of its staff at sea and on land. This makes it vital that merchant marine officers and the personnel of shipping companies and agencies receive continuing professional training.

Dictionaries do not give a comprehensive definition of ships that captures their full essence: transport unit and capital good, important element in a nation's economic life, vehicle for civilization and progress. A classification is also needed which covers the entire gamut of ships. One criterion for grouping them could be based on the two main factors used for their classification: their physical characteristics, and their functions and conditions.

It is impossible to speak of shipping without referring to ports, an essential element in moving goods by sea. Since shipping is a two-ended activity, the ports of loading and destination are necessarily interdependent. The impact of port costs on the rates charged by regular liners is on the order of 50% to 60% of the total, so that the length of time a ship remains in port constitutes a major opportunity for lowering the costs of ocean transport.

The world merchant fleet has grown spectacularly since 1970, with a doubling in tonnage that has led to excess capacity afloat and a consequent large-scale lay-up of vessels, as well as the retirement of many more. Nevertheless, orders for new ships continue to be placed. On 1 January 1987, the world fleet was composed of 34 068 ships totalling 613 million dwt. Much of this tonnage is registered under flags of convenience such as those of Liberia, which occupies first place with 99 million dwt, and Panama, second with 67 million.²

Most shipping companies that provide liner services are affiliated with one or more liner conferences, cartels which offer advantages but which have been criticized because of the power they wield. In an attempt to deal with this condition, a Code of Conduct for Liner Conferences was negotiated within UNCTAD, which was signed in Geneva in 1974 after lengthy discussions, and which entered into force only in October 1983. The Code of Conduct regulates relations among member shipping companies themselves and with shippers, and institutionalizes the right to

equal shares of traffic by the two countries in which that traffic is generated. The Code stipulates that, when companies from third countries are involved, they can carry no more than 20% of the traffic. The Code also provides for the creation of shippers' organizations and consultations with the conferences. Shippers' councils have operated successfully in Europe and other countries, but in Latin America only three or four have prospered.

Another useful measure for counteracting the power of the conferences would be to set up government-level technical units for the inspection and analysis of freight rates, such as those in Brazil and Mexico. Setting freight rates for liners is a complicated matter, since many factors influence the cost of water transport. The structure of conference rates is obsolete and the system of rate averaging by groups of ports is unjust. To help solve these problems, ECLAC has been promoting the use of a three-part tariff system, based on a breakdown by costs in the port of loading, navigation costs, and costs in the port of discharge.

Goods in liners are covered by contracts of carriage called bills of lading. The Convention on the Carriage of Goods by Sea (Hamburg Rules), approved in 1978, was intended to establish a fair balance between the interests of the different parties involved in shipping transport contracts, and safeguarding the rights of shippers.

Marine insurance has existed for over 2 000 years, and today is an industry involving billions of dollars annually. Losses under marine insurance are total or partial, and the latter are divided into general and particular average. Protection and indemnity (P&I) clubs insure shipping companies against accidents and eventualities not covered by other insurance policies.

Modern technology has created unitized cargoes through the use of pallets and containers, semitrailers and barges. The use of these units made new types of vessels necessary: container ships, roll-on/roll-off (*Ro-Ro*) ships, lighter-aboard-ship (*LASH*) carriers, and multipurpose carriers. The adoption of new technologies requires the modernizing of port installations as well as the updating of legislation and regulations, together with labour and operating rules.

Unitization of cargoes is a physical, material operation, while multimodal transport is an institutional concept. The advent of the container era—and its consequence, the introduction of multimodal transport—created the need to establish a new set of operating rules to reflect these new conditions. Therefore, in 1972, UNCTAD began work on a United Nations Convention on International Multimodal Transport of Goods, which was approved in 1980. The Convention includes elements of both public and private law and recognizes the right of governments to regulate the activities of multimodal transport operators.

Since ancient times, seafaring nations have always supported their merchant marines in one way or another, directly or indirectly. Today, at

least 48 nations have instituted measures to protect and develop their commercial fleets, either through building or operating subsidies, tax benefits and long-term, low-interest loans, or through coastal shipping reservations and preferential cargo treatment for national flag vessels. This study contains information on legislation to foster shipping in the LAIA member countries, which includes exclusive rights to coastal shipping, reservation of a percentage of foreign trade, tax benefits for shipping companies and, in some cases, a fund for enlarging and renewing the fleet, as well as a number of bilateral agreements for equal shares in maritime trade.

Another facet of shipping policy in the LAIA countries is the power of their state companies: two-thirds of the tonnage and 10 out of the 13 most important shipping lines are government-owned. The expansion of merchant marines in the Latin American region has gone hand-in-hand with the development measures applied by the countries. Between 1961 and 1985, the deadweight tonnage of LAIA countries grew by 349% on the average, with the greatest proportionate increase in Ecuador (1 555%) and the most important real growth in Brazil, which rose by more than seven million dwt. There was a marked improvement in the age of ships over the period, with the weighted average dropping from 17 years to 10.2 years.

The share of national shipping companies in the foreign trade of the LAIA countries was 129 million t in 1983, for 30% of the total (including 46 million t in foreign ships that were chartered and operated by national shipping companies), 68 million t of which were exports and 61 million t imports. In turn, national shipping companies earned almost US\$ 3 500 million in 1983 from freight (30% of the total, including almost US\$ 1 000 million from chartered ships), while foreign shipping companies collected US\$ 8 100 million (70%) out of a total of US\$ 11 600 million from freight.

Of the many problems affecting shipping in Latin America, among the more important are cargo imbalances, instability in certain trades, the trend towards rising conference rates, port deficiencies, and excess paperwork and red tape. Some of the problems arise because these are developing countries, but others spring from institutional failures, whose solution depends on the will of the nations in question to improve conditions.

1. The importance of transport

Transport is a service industry responsible for carrying or transferring people and goods from one place to another. Without it, a country's trade, its progress, and even its very life would be possible. In effect, links between the members of a community, between cities, regions and

countries depend on the availability of transportation. Transport is a complementary industry, but it is no less important than basic industries, whether they belong to the primary sector (extractive: agriculture, fisheries, mining) or the secondary sector (industrial or manufacturing activities). Together with trade and communications, it forms part of the service sector, whose activities are indispensable for society.

Many ingredients are necessary for the economic and social development of a community, but no one of them alone is sufficient to produce an improvement in the standard of living of a nation. The exploitation of natural resources, industrialization, education and public health programs, and good administrative organization are some of the factors that promote development, and while all are necessary, none is sufficient in and of itself. Transport is not the key to progress either, but it plays a major role in facilitating other basic objectives. Thus, transport is a major factor in making the land productive, in marketing agricultural products, and in making forest and mineral resources accessible. It is a significant factor in the development of industry, in the expansion of trade, in the implementation of nation-wide education and health programs, in the exchange of ideas and in national and regional integration.

Thus transport, on the average, comes first or second in magnitude among the costs incurred to develop countries. Its importance is also reflected in the stress placed on it in the technical assistance programs offered by international agencies; for example, one-fifth of all the loans made by the World Bank have been allocated to transport. The priority assigned to transport in cases of war is also of prime importance; during World War II, 3.4 times more bombs were dropped on transport facilities than on combatants.

Renowned economists have also stressed the outstanding importance of transport. Wilfred Owen, a famous specialist with the Brookings Institution in Washington, D.C., has said that:

"... transport and communications make it possible to build a nation, to exploit its natural resources, to feed its people and its factories. In every nation and in all stages of development, there is the same relation between economic progress and the capacity to move men, materials, and ideas."³

Another internationally famous writer, Professor Stanley G. Sturme, who worked for many a years at UNCTAD, has very rightly pointed out that, since trade cannot be conducted without transport, an efficient international supply of transport at reasonable cost is a basic element in the development process. Furthermore, transport services have a dual relationship with trade, since on the one hand, transport appears in response to a given trade requirement, while on the other hand, it is often true that transport services promote trade. Historically, the sequence in which transport has been made available first and trade has followed is

more important than the case in which the possibility of trade exists and transport is provided to serve it.⁴

Many other authoritative opinions could be cited, but it is better to give a few practical examples of the decisive influence played by transport in the development of nations. Perhaps the most typical case is Japan. It is a small country (377 000 km², half of the size of continental Chile) with a population of around 120 million, yet it has one of the highest per capita gross national products in the world —11 330 dollars in 1985, surpassed only by the United Arab Emirates, USA, Switzerland, Kuwait, Norway, Canada and Sweden, in that order.⁵ It is also one of the largest producers of steel, despite the fact that it has no iron or petroleum and very little coal. Its shipbuilding industry is first by a considerable margin, and its merchant marine the largest, with 3 960 ships and 55.5 million dwt as of 1 January 1987.⁶ (Although Liberia and Panama have more registered tonnage, their ships do not count as national fleets since their flags are ones of convenience, a phenomenon that will be dealt with later.) In short, Japan depends on maritime lines of communication and uses them perhaps more than any other nation, both because its archipelago has more than 1 000 islands and because its main suppliers and markets are thousands of miles away.

Another striking example of the role of transportation is Switzerland, that great yet small nation of scarcely 41 000 km², an area equal to less than 5% that of Bolivia. Although it has no coast, in 1985 its 6.4 million inhabitants had a gross national product of US\$ 16 380 per capita. Switzerland has known how to overcome its geographic isolation by building impressive tunnels such as those of Saint Bernard, Saint Gotthard and Simplon, which have linked it by highway and rail to the ports of other countries —Antwerp in Belgium, Rotterdam in Holland, Genoa in Italy— to carry its highly-industrialized products to foreign markets, even in ships flying its own flag, or using the air network that stretches from its modern airports in Geneva and Zurich to the most remote corners of the planet.

Last, the case of Brasilia, the modern capital of Brazil built in 1960 in the very heart of that "nation-continent", 1 200 km from Rio de Janeiro, is worthy of note. Contrary to the predictions of pessimists and political opponents of President Juscelino Kubitschek, Brasilia today is a beautiful city with over one million inhabitants that has more than repaid its initial investment costs. The construction of this new federal capital made possible the incorporation into the national economy of thousands of hectares adjacent to the highways that link it to the Atlantic Coast in the East, to Belem in the North and, in the near future, to the Pacific Ocean in the West, in a development process which has been compared to the expansion that occurred in the United States in the 19th century with the westward movement of settlers.

2. The predominance of maritime transport

Seven tenths of the earth are covered by water. Of the 510 million km² making up the planet's surface, 361 million km² are oceans and seas. This is the main reason why international trade is so intimately related to maritime transport, which moves the vast majority of cargo. The volume of goods transported by sea rose from 550 million t of foreign trade in 1950 to 2 350 million t in 1970, and in 1979 reached the unprecedented figure of 3 714 million t. It dropped sharply thereafter, due to the world recession, to 3 090 million t in 1983, and since then has recovered only to 3 362 million t in 1986.⁷

Over 90% of the foreign trade is carried by sea in all countries of Latin America and the Caribbean, except for Mexico, which has an extensive land border with the United States, and Bolivia, most of whose trade is with Argentina. In the 11 countries of the Latin American Integration Association (LAIA), international ocean transport in 1983 was 432 million t (342 million t in exports and 90 million t in imports). However, the importance of shipping is measured not only by the volume of cargo moved but also by freights charges by merchant vessels. International freight expenditures in the LAIA countries amounted to US\$ 3 100 million in 1970, US\$ 12 000 million in 1982, and US\$ 11 600 million in 1983, and represented the most important foreign trade item in the region as a whole, after petroleum.⁸

In South America, a number of factors contribute to the predominance of maritime transport:

Peripheral development. As a consequence of historical structures that emphasized the export of raw materials to overseas markets, development in South American countries has been concentrated along their coastlines. Most of the 250 million inhabitants of this continent live within 150 km of the coast, while 12 of the 15 cities with populations of over one million are near or on the ocean: Buenos Aires, Guayaquil, Montevideo, Porto Alegre, Recife, Rio de Janeiro and Salvador are ports, while Caracas, Cali, Lima, Santiago de Chile and Sao Paulo are not far from the sea. Only three large cities —Belo Horizonte, Bogotá and Medellín— are truly distant.

Natural obstacles. Impenetrable jungles such as those of the Amazon, inhospitable deserts like the Atacama, and the high mountain ranges of the Andes are barriers to the development of land transport.

Vast distances. The main centres of production and consumption on the continent are widely separated. Valparaíso, Chile, is 3 660 nautical miles from Rio de Janeiro, Brazil and 2 820 from Guayaquil, Ecuador. Furthermore, the main import and export markets for South America are overseas, in Europe, Japan and the United States.

Degree of continentality. This term describes the relation between the length of a country's or continent's coastline and its overall area.

While the degree of continentality in Europe is 1:289, (i.e., 1 km of coastline for each 289 km² of area), in Latin America it is 1:680. Nonetheless, there is considerable difference between the highest relation, which corresponds to Brazil (1:1 150), and the lowest, which is Chile (1:174).

Rail transport problems. Although there are 13 international railway lines which link pairs of countries in South America, all located in the South Cone, none carries large amounts of freight. Differences in gauge are also a problem (1 000 m, 1 435 m and 1 675 m). A special difficulty is posed by administrative and bureaucratic red tape at border crossings.

Highway deficiencies. Another important factor that has influenced the predominant use of ocean transport in intraregional transport has been the insufficiency and poor condition of international highways. Special problems also exist with Customs, administrative, health and insurance requirements and formalities that apply to road transport. Although significant progress has been made in the last two decades in highway construction and improvement, much remains to be done in the institutional field.

Carrying capacity of ships. Ships are the vehicles with the largest cargo-carrying capacity. A vessel of 8 000 dwt (the average for general cargo ships in Latin American traffic) can carry the same amount of cargo as 400 20-t trucks or 22 trains with twelve 30-t cars each. For the transport of solid bulk cargo, there are now vessels of 160 000 dwt capacity, and super tankers can carry as much as 550 000 dwt.

Regarding the carrying capacity of ships in comparison with other means of transport, Admiral Chester W. Nimitz, United States Chief of Naval Operations in World War II, is said to have remarked on the continued validity of Sir Walter Raleigh's 17th century declaration—that whoever dominates the sea, dominates trade; whoever dominates world trade dominates world wealth and, in consequence, the world itself. Nimitz's observation was made in connection with the relative capacities of ships and airplanes used for transporting war materials: the 100 000 t of cargo per month carried by 44 ships from San Francisco to Australia would have required 10 000 four-engine C-47 aircraft, operated by a highly trained staff of 120 000 people, plus 89 tankers to provide gasoline in route and at the destination.

Also, in this day and age when the oil crisis forces us to be concerned with saving energy, it is interesting to note the differences in power required to move cargo: one horsepower can move 4 000 kg by water, 400 kg by railway and 150 kg by truck.⁹

3. Factors affecting the shipping business

According to Webster's Seventh New Collegiate Dictionary, a merchant marine is "the privately or publicly owned commercial ships of a nation."

However, a merchant marine does not consist of ships alone, but also requires officers and crew, a commercial organization and mastery of the shipping business. A merchant marine is a creator of collective wealth, whose contributions to a country's economy go far beyond the money earned from freights. It is a basic instrument for a nation's development and economic independence; an indispensable and effective tool in the service of trade, industry, production and consumption; an activity that generates national income and produces valuable foreign exchange; an agent for regulating conference freight rates; a source of direct and indirect employment for individuals engaged in transport operations and in related activities such as provisioning, repairs and shipbuilding, and a major client for materials used in these activities. In addition, a merchant marine constitutes a powerful element of national defense in the case of armed conflict. A merchant marine provides free access to world markets, and a country that does not have one of its own loses its initiative to manage and conduct its own trade, which it must leave in the hands of foreigners.

Shipping lines are the operative manifestation of merchant marines. There are companies devoted exclusively to the international transport of general cargo in liners, to coastal shipping or to both services, to irregular services using tramp ships, to carrying liquid fuels in tankers, to the operation of refrigerator ships or container ships, or to administering a combination of these services. Up to a few decades ago, there were large shipping companies devoted to passenger transport, but these have almost disappeared (except for a few offering tourist cruises) due to competition from commercial airlines and the high cost of crews.

Mere possession of ships, however, is not sufficient to constitute a merchant marine. It is also necessary to know how to operate them and to understand the shipping business with its complex, dynamic, and random nature. Shipping companies must be efficient and possess adequate financial and human resources to properly administer an activity that requires professional experience, business sense, and the ability to make good decisions, especially in the face of the many external factors to which the shipping industry is subject at the world level. By way of example, the following factors are completely beyond the control of shipowners:

International conflicts. Not only wars but also threats of armed conflict contribute to greater demand for the transport of arms, food, raw materials and troops. Thus, the closing of the Suez Canal in 1967, which forced ships from the Persian Gulf to go around the Cape of Good Hope, had an effect on the size of oil tankers and on freight rates for crude petroleum. Shipping is also influenced by political decisions of the great powers, such as the restrictions placed by the United States on exports of grain to the USSR after the invasion of Afghanistan (imposed by Presi-

dent Carter under the Export Administration Act of 1979), or the recent moves to register Kuwaiti tankers under the flags of the USA and the USSR so that they may be offered protection by their "own" country in the event of an attack by one of the belligerents in the conflict between Iran and Iraq.

Harvests. Poor harvests in a country make it necessary to import more agricultural products, as has repeatedly been the case in India and the USSR. When the demand for cargo space increases, costs also increase.

Climate. A very harsh winter increases the need to import coal, above all in certain European countries, with a consequent increase in costs.

Economic boom or recession. The world economic situation is a determining factor in the rise and fall of demand for shipping, and therefore has an impact on the freight market for tramp ships and oil tankers. Liners maintain a certain degree of stability in rates, which—although they exhibit a permanent upward trend—never fluctuate as widely as those of chartered vessels for either solid bulk cargoes or liquid fuels.

Other factors. In the long run, the composition of the world fleet and the level of freight rates are also subject to the influence of other factors such as the discovery of new sources of raw materials (iron ore in Australia, oil in Libya and the North Sea), the entry into service of transcontinental oil pipelines, national population growth, higher living standards in the developing nations, etc.

Shipping has traditionally been a one-person or a one-family business, managed according to individual criteria. Classic examples of these legendary magnates are Aristotle Onassis from Greece, and Sir Y.K. Pao of Hong Kong, who built true floating empires. Others can be mentioned such as Lauritzen of Denmark, Costa of Genoa, Niarchos and Livanos of Greece, T.C. Tung of Hong Kong, Wilhelmsen of Norway, and the Norwegian-American Erling D. Naess. Today, however, most shipping lines are stock companies, whose capital is divided into shares and whose administration is in the hands of a board of directors and a general manager who run it as if it were their own. These may in turn be classified as state-owned or private, while the latter may be common carriers, serving any shipper, or private or industrial, at the exclusive service of their own industries or subsidiaries of them, as is often the case in the transport of oil, iron ore and coal.

The vast majority of liner vessels belong to shipping companies affiliated with freight conferences, whose rates and conditions of transport are the same for each member. Competition lies in good service: suitable cargo handling to avoid damage and loss, keeping on schedule, acting quickly on claims. In other words, the company offering its clients the most efficient transport will be the one that obtains permanent access

to cargoes in volumes large enough to allow it to keep its ships running. The success or failure of the company will depend to a large extent not only on the skill of its directors in managing the business, but also on the ability of its personnel at sea and on land. Captains and officers are not only responsible for sailing their vessels under optimum professional conditions, but also for managing them commercially. Work on board is a team effort requiring an extraordinary degree of human interdependency in which, as the Spanish poet Tomás Morales says in his *Ode to the Sea*, "Safekeeping of the vessel given into your charge demands all your energies combined."

In other words, the shipping business demands a high level of company *esprit de corps* and professional vocation if it is to prosper or even merely survive in a field open to fierce international competition. This is why good training is so necessary for merchant marine officers—who in most countries come directly or indirectly under the Navy—and for the office staff of shipping companies and agencies, who generally learn on-the-job or are recruited from among recent university graduates. There are schools for merchant marine officers in Argentina, Brazil (two), Cuba, Ecuador, Mexico (three), Panama, Paraguay, Peru and Venezuela, while in Chile, Colombia, the Dominican Republic, El Salvador, Guatemala and Uruguay, future officers of the commercial fleet are trained in naval colleges, alongside Navy cadets.

On the international level, the World Maritime University was opened in Malmö, Sweden, in 1983 as a joint project of the International Maritime Organization (IMO), the United Nations Development Programme (UNDP) and the Swedish Government. It trains 140 young people from 50 developing countries for a two-year period for executive positions with shipping companies, agencies and port authorities.

4. Ships

Webster's Seventh New Collegiate Dictionary defines the word boat as a "small vessel propelled by oars or paddles or by sail or power," while a ship is a "large seagoing boat." Like the definition of the merchant marine, these are incomplete and limited both materially and physically. The concepts do not in the least reflect the essence of this special entity known as the ship, which has its own name, personality, and one could even say "soul", which is capable of inspiring affection or hatred, which responds to the hand that guides it, and which can range from a walnut shell to a floating city, from a "coffin with a propeller" to a princely palace. Even in this era of space craft and interplanetary travel, a ship continues to be a prodigy of human ingenuity.

What is lacking, then, is a comprehensive definition that captures the essence of a ship: unit of transport and capital good, substantial

element in the economic life of a nation, vehicle for civilization and progress, and "land won from the sea" in the apt words of the late Chilean journalist Fernando Durán. As the motto of the Colombian shipping company Grancolombiana says, its vessels are "the homeland present on the high seas." In truth, a country is enlarged each time a piece of its soil is set afloat under its flag, and for some countries ships represent the only means of expansion that permits them to broaden their frontiers and to project themselves into the future and towards all the horizons of the world.

Just as there is no complete definition of what is understood by merchant ship, there is no classification that includes its entire scope. However, one appropriate way of grouping ships would cover the two basic aspects of their classification:

Physical characteristics:

- construction material,
- propulsion,
- type of fuel,
- structure, and
- classification society listing;

Functions and conditions:

- nature of the goods transported,
- flag,
- owner,
- operating company,
- sphere of operations,
- routes served,
- services offered, and
- regularity of schedules.

With regard to construction materials, merchant ships can be divided into those having hulls of steel (at present 99.9% of all deep-sea vessels), iron, wood, mixed wood and steel, ferrocement, or fiberglass. As for propulsion systems, at present 81% of the world fleet is powered by diesel engines, 18% is powered by steam or gas turbines, or by reciprocating steam engines, while 1% is nonpropelled.

It is well known that sailing ships were the basic instruments of maritime transport from the year 2000 B.C. up to the second half of the 19th century. The large clippers of the saltpeter trade continued sailing between Europe and the coast of Chile even into the first quarter of this century. It now appears that, thanks to the oil crisis, cargo sailing ships will once again serve international trade. In fact, after 20 years of studies and experiments, a German engineer has patented the *Dynaship*, a 17 000-t capacity sailing ship with six rotating aluminum masts, 30 sails that can be hoisted and lowered automatically, and auxiliary motors for port maneuvers and for use when there is no wind. Since 1980, the

Japanese have been using the *Shin Aitoku Maru*, a 1 600 dwt sail tanker fitted with supplementary diesel engines, which achieves fuel savings of approximately 50%. In 1984, Japan christened the *Usuki Pioneer*, a 2 000 dwt cargo ship with metal sails controlled by computers, which can also save 50% in fuel consumption as compared with a normal ship of similar tonnage. Therefore, it is possible that sailing ships will return to cargo transport on those routes along which there are constant winds, thereby adding a new dimension to sail propulsion, assisted by diesel engines.

As for fuel, the oil crisis of 1973 with its sharp increases in the cost of bunkers awakened interest in the feasibility of going back to coal, which was no longer used for marine propulsion. Several coal-powered vessels have since been built, several for the coal trade itself between Australia and Japan. However, a lack of supply stations for refueling and a reduction in cargo space caused by having to carry coal make any large-scale conversion to this fuel unlikely under present circumstances.

From the viewpoint of structure, ships basically have one or several decks, and can be classified as full scantling; shelter deck, which may be open, closed, or open/closed (a device used to reduce registered tonnage and to pay lower port fees); raised quarterdeck; well deck, like three-island tankers; and double-hulled, such as the BACAT (barge aboard catamaran), which has adopted the form of the catamaran used in the Polynesian Islands.

Classification societies catalogue ships with codes that serve as indicators to insurance companies and maritime port authorities of the level of navigation safety, in accordance with the International Convention on Load Lines and the International Convention for the Safety of Life at Sea, both of the International Maritime Organization. For example, code 100-A.1 indicates fullest compliance with requirements for hulls, machinery and equipment.

Depending on what is being transported, vessels are classified generically into passenger ships, mixed ships and cargo ships. Under the Convention for the Safety of Life at Sea, passenger ships are defined as vessels that carry more than 12 passengers, have a physician on board, and on which accommodations have priority over cargo. This category includes transatlantic liners, tourist cruise ships, ferries and hydrofoils. As their name indicates, mixed ships are those which carry both passenger and cargo.

Until the beginning of this century, different types of cargo ships did not exist. There was only one kind, known in the United States as GALA (go anyplace, load anything). Later came tankers, and today, the extensive range of cargo ships is commonly divided into freighters, bulk carriers, tankers, combined ships, and ships for unitized cargo.

The classification of cargo ships could be broken down even further to include the following types (although this list does not claim to be exhaustive):

Freighters: General cargo ships that have the interior of their hulls divided by vertical bulkheads into three, four, five or six holds that are subdivided horizontally by tween decks. Both the tween decks and the upper deck have hatches to permit cargo to be loaded into the holds; all general cargo ships are equipped with their own cargo handling equipment such as booms, cranes and gantries. Freighters form the backbone of the fleets of shipping companies engaged in regular service (liners). Many of them have refrigerated holds to carry fruit, produce, meat, dairy products, fish, shellfish and other perishable commodities in lots smaller than full shiploads.

Multipurpose carriers: Versatile vessels capable of simultaneously transporting general break-bulk cargo, containers and —optionally— liquid cargo in tanks, and having removable tween decks so that they can be converted into bulk or mineral carriers. Many liner companies are using them to replace their general cargo ships.

Bulk carriers: Ships for the transport of dry bulk cargo, whose main structural differences, as compared with general cargo vessels, are a lack of tween decks, larger hatches to give access for mechanical handling equipment and facilitate loading and unloading, and a machine room that is always located in the stern to prevent the propeller shaft from interfering with the holds. There are different types of bulk ships dedicated to carrying certain products by being fitted with suitable equipment for this purpose, for example, the material with which the holds are lined, cooling or heating systems, or special cargo handling equipment. Thus there are bulk carriers for cement, salt, wood, fish meal and sulphur, as well as container ships and vehicle carriers. One special case is the bulk slurry carrier designed by the Marcona Mining Company in Peru, which transports its iron ore in suspension by pipeline from mine to port, transforms it into slurry for shipment aboard the bulk carrier, and then reliquefies it to be pumped back ashore in suspension at the port of destination.

Tankers: Vessels which, in place of holds, tween decks and hatches, have longitudinal and transverse bulkheads that form tanks for carrying liquid cargo. The liquid is loaded by pumping it from land installations onto the tanker, where it is distributed to the different tanks using a system of pipes and valves on deck; unloading is performed using the vessel's own pumps. There are tankers for crude oil that can be classified according to size as T-2 for typical 16 600 dwt vessels, very large crude carriers (VLCC) of 200 000 to 400 000 dwt, and ultralarge crude carriers (ULCC) over 400 000 dwt. There are also tankers for petroleum by-products, known as product carriers or parcel carriers, and tankers for

cargoes such as vegetable oils, molasses, wine and liquid sulphur. Other special types include tankers for liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

Combined carriers: Vessels that combine the cargo features of oil tankers and bulk carriers, in order to avoid the problem faced by these single-purpose ships of generally having cargoes for one direction only and so returning in ballast. The ore/oil carrier (O/O) may thus transport ore on the outbound voyage and oil on the inbound trip, using the holds as tanks after they have been cleaned. The ore/bulk/oil carrier (OBO) has side tanks to carry oil and central holds to carry ores or dry bulk products.

Unitized cargo carriers: Modern vessels built to take advantage of new transport technologies, for example:

Container ships: Vessels that differ from general cargo carriers by having cellular holds and hatch covers that extend over the entire top. They can also carry containers on top of the hatches. They have greater capacity and are faster than conventional general cargo vessels, although due to the oil crisis, their added speed is of limited use today. Third-generation fully-cellular container ships can be as large as 50 000 to 60 000 grt and can carry up to 4 285 TEUs (20-foot equivalent units, corresponding to a standard container of 20 x 8 x 8.5 ft). Semicontainer ships, which have cellular and general-cargo holds, also exist.

Pallet carriers: Ships that have lateral ports so that palletized cargo can be loaded, unloaded and stowed directly by forklift trucks.

Roll-on/roll-off (Ro-Ro) ships: Vessels having the advantages of space and a ramp system so that vehicles —generally trucks loaded with containers, general mixed cargo or even bulk cargo— can drive on or off the vessels using their own wheels. The ramps or drawbridges are located in the bow, stern or on the side of the ship. Ro-Ro's are ideal for door-to-door transport over relatively short distances. They are also used in traffic between the United States and ports of the North Atlantic, and recently in round-the-world service.

Barge-carrying vessels: A modern system of unitized transport consisting of a mother ship that hoists loaded barges aboard at the port of embarkation, transports them to the port of destination where it deposits them in the water and leaves them. It then hoists other previously loaded barges aboard and carries them on to the next port. The barges can carry containers, general cargo or dry bulk indistinctly. The system has several advantages. In principle, the mother ship never has to dock, since while lying at anchor it uses its own equipment to load and unload the barges, which are then towed to the docks for port operations. This greatly reduces port time by relieving the mother ship of having to wait on berth availability, port strikes, work slow-downs, etc. There are three types of barge carrying systems, the lighter-board-ship (LASH), the Seabee, and the barge-aboard-catamaran (BACAT).

LASH uses a powerful bridge crane that runs along the deck to stow the barges in the hold after hoisting them from the water, and that operates in reverse order for unloading. *LASH* vessels are very rapid, from 18 to 23 knots, and can generally carry 73 barges with a capacity of some 370 weight or 500 measurement tons each. Some have a container crane and cellular container holds. One *LASH* vessel can do the work of three or four conventional cargo ships, but its cost together with the cost of the three to five barge sets it needs to operate is twice that of a multipurpose carrier.

Seabee operates on the same principle as *LASH*, but has an elevator in the stern to lift the loaded barges to one of three decks, where they are stowed automatically. *Seabee* vessels carry 38 barges each with a capacity of 847 weight or 1 108 measurement tons each, and can sail at from 18 to 22 knots.

BACAT, whose hull is like that of a Polynesian catamaran, operates on the same principle as the *Seabee* but with much smaller barges, and is only used for short voyages. It travels at 13 knots and carries 10 barges with 140 t of cargo each. Three *LASH*-type barges are used as feeders for a *BACAT* barge.

With regard to the flags they fly, merchant vessels are classified as being of a country's own flag, or foreign. In the case of Latin America and more precisely of LAIA, foreign vessels are divided into subregional, which belong to the member countries of the Cartagena Agreement (Andean Pact); regional, which belong to the member States of LAIA; and extrazonal, which covers all others. Throughout the world, foreign vessels are subject to an additional classification: those flying flags of convenience, or "flags of necessity" as they are called in the United States, whose countries are known as open registry or PANLIBHON (an acronym which refers to the first countries that offered their flags to foreign shipowners, Panama, Liberia and Honduras) flags.

Ownership divides vessels into state and private fleets. As will be seen later, Latin American merchant fleets are mostly government-owned, 62% as of 1 January 1985, having grown from 53% of the gross registered tonnage since 1970.

With respect to the shipping company that operates them, vessels are owned or chartered. The vast majority liners are the property of their shipping companies. On the other hand, the owners of many oil tankers time-charter them —sometimes for their entire working lives— to oil companies.

Depending on their spheres of operation, ships may be ocean-going, river or lake vessels. Ships can also be classified according to the routes they serve. They may be coastal vessels operating within a country, which can be further broken down into coastal, regional and island. Or they may be foreign service vessels, which can in turn be classified as

subregional, such as those which serve traffic among the countries of the Andean Group; regional, like those plying among the LAIA member states; extrazonal, which in the case of Latin America would be those extending their operations beyond the limits of the region; and cross traders, the international term for vessels that serve routes between countries whose flag they do not fly (i.e., third countries).

With regard to the services they offer, vessels are public or private (industrial). A public service vessel is one that carries the cargo of any shipper interested in using its holds. A private service or industrial vessel, on the other hand, is one devoted exclusively to carrying raw materials or products owned by the shipping company or by other companies, such as the oil tankers and ore carriers that work for oil and mining companies.

If regularity of itinerary is considered, ships can be grouped into liners and tramps. Liners are vessels that offer services to any user, that ply set routes at given frequencies, that have preestablished rates, and that generally are affiliated with a shipping conference. Tramps take full cargoes from a single shipper between a port of loading and a port of destination, with irregular itineraries and frequencies, at rates set for one or more trips under a charter contract.

The world trend for many years has been an increase in the tonnage of ships. Average deadweight for vessels over 300 dwt grew from 1 570 in 1900 to 3 190 in 1930, 6 460 in 1970 and 13 276 in 1985. This trend has been even more pronounced in the case of tankers, which as of 1 July 1986 averaged 41 700 dwt; 406 of them were over 100 000 dwt, and 113 had capacities of around 275 000 dwt, including three OBOs.¹⁰ In 1978, the shipyards in Saint Nazaire, France, christened the tanker *Batillus*, at 550 000 dwt the largest vessel in the world.

The interest of shipping companies in owning increasingly large vessels can be explained on the grounds of economies of scale. The cost of a 300 000 grt vessel is slightly more than twice that of a 60 000 grt ship. Its equipment is the same, while its fuel and lubricant consumption is only three times higher, so that the total cost of carrying oil in the larger ship is only 30% more than in the smaller. Nevertheless, there are a number of constraints on the size of vessels. With regard to general cargo carriers, the restriction lies in the difficulty of filling liners to capacity. Bulk carriers and tankers are more often restricted by problems of depth in ports or canals, as is the case of the Panama Canal, for example, where the maximum draught ranges from 35 to 40 ft; navigation is thus limited to vessels of not more than 65 000 to 75 000 dwt, and ships known as Panamax have been built especially for this trade. To overcome the draught problem with large tankers, some countries have built artificial islands or monobuoys, often several miles off shore, where fuel is transferred to smaller ships or pumped to land stations. The trend towards

building gigantic tankers has declined since the first oil crisis in 1973, for the reasons already explained, and also because of the enormous value of large cargoes and the world drop in demand for petroleum.

In recent decades, there has been a sustained trend towards diversifying floating tonnage in response to a growing demand by commerce for new types of vessels, and the need of shipping companies to become more efficient by specializing fleets and using new technologies. According to a recent UNCTAD report, the highest expansion rates from 1983 to 1985 were for fully-cellular container ships and ore and bulk carriers. On the other hand, there has been a constant reduction in oil tankers and general cargo vessels.¹¹

5. Cargo

For transport purposes, cargo has traditionally been classified as general, solid bulk, liquid bulk and refrigerated. However, with the advance of technology in the last quarter century, a new system —multimodal transport— based on unitized cargoes has been incorporated into the movement of goods.

General or assorted cargo is defined as heterogeneous items transported as individual units in sacks, bags, boxes, cases, bundles, barrels, demijohns, large bottles, small or medium packages. This type of cargo forms most of the coastal shipping trade and the foreign service of liners.

Solid bulk cargoes consist of products transported without packaging, in large volumes, usually in shipments that fill an entire vessel. In general, they are raw materials. The main solid bulk items in world trade are alumina, bauxite, coal, grains (including barley, beans, corn, oats, rye, sorghum, soya and wheat), iron ore, and phosphate. Other of importance include cement, coke, fertilizers, salt, scrap iron, sugar, sulphur, and wood (especially logs). Recently, a new classification known as neobulk has been made, based on differences in the form of loading, stowage aboard and type of specialized vessel required to transport scrap iron, wood, and wheeled vehicles.

Crude oil and its derivatives (bunker, diesel, automotive and aviation gasoline, lubricants) represent over 90% of the total of liquid bulk cargoes and more than 40% of all the world's maritime trade. Other liquid cargoes transported in tankers, in tanks aboard regular freighters or in multipurpose carriers are chemical products, citrus juices, edible oils, molasses, wine, and the like. Yet another product requiring the use of tankers is gas, either liquid (butane and propane) or refrigerated (methane or mixtures with ethane).

Table 1 shows the development of world shipping by main products over the last 12 years.

Refrigerated cargo is carried in large refrigerator ships, in the refrigerated holds of regular freighters or multipurpose carriers, or in refrigerated containers, and includes butter, cheese, eggs, fish and shellfish, meat, and poultry, as well as fresh fruit of all kinds, especially apples, grapes, lemons, nectarines, peaches, pears, and plums. Each of

Table 1

DEVELOPMENT OF WORLD MARITIME TRAFFIC
BY PRINCIPAL PRODUCT, 1973-1984

Year	Crude oil	Petroleum products	Iron ore	Coal	Grain	Other cargo	Total trade
a) <i>Tons</i> (millions)							
1975	1 263	233	292	127	137	995	3 047
1976	1 410	260	294	127	146	1 075	3 312
1977	1 451	273	276	132	147	1 120	3 399
1978	1 432	270	278	127	169	1 190	3 466
1979	1 497	279	327	159	182	1 270	3 714
1980	1 320	276	314	188	198	1 310	3 606
1981	1 170	267	303	210	206	1 305	3 461
1982	993	285	273	208	200	1 240	3 199
1983	930	282	257	197	199	1 225	3 090
1984	930	297	306	232	207	1 320	3 292
1985	871	288	321	272	181	1 360	3 293
1986 ^a	940	310	304	268	160	1 380	3 362
b) <i>Ton miles</i> (thousands of millions)							
1975	8 885	845	1 471	621	734	2 810	15 366
1976	10 199	950	1 469	591	779	3 035	17 023
1977	10 408	995	1 386	643	801	3 220	17 453
1978	9 561	985	1 384	604	945	3 455	16 934
1979	9 452	1 045	1 599	786	1 026	3 605	17 513
1980	8 219	1 020	1 613	952	1 087	3 720	16 611
1981	7 193	1 000	1 508	1 120	1 131	3 710	15 662
1982	5 212	1 070	1 443	1 094	1 120	3 560	13 499
1983	4 478	1 080	1 320	1 057	1 135	3 510	12 580
1984	4 508	1 140	1 631	1 270	1 157	3 720	13 426
1985	4 007	1 150	1 675	1 479	1 004	3 750	13 065
1986 ^a	4 730	1 270	1 620	1 460	875	3 810	13 765

Source: Fearnley A/S, *Review 1986*, Oslo, January 1987, as reprinted in *Shipping Statistics* Institute of Shipping Economics and Logistics (ISL), Volume 31, No 2, Bremen, February 1987, p. 32.

^aEstimated.

these products must be kept at its own ideal temperature to maintain quality and avoid rotting, since they are perishable and delicate.

Unitized cargo groups a number of small- or medium-sized packages of different shapes and sizes together into homogeneous handling units that are large enough to be moved by mechanical means, which can be done more quickly, safely and efficiently than manually while substantially reducing the risk of breakage, theft and loss. The result is a reduction in costs for both the owner of the cargo and the carrier.

Section 16 deals in detail with the subject of unitized cargoes. For the moment, it is sufficient to note that, depending on its transportability in containers, international cargo is classified as excellent, suitable, marginal or unsuitable, according to a well-known guideline of the Port Authority of New York and New Jersey:¹²

Excellent: Refers to high-cost products with relatively high freights, whose physical characteristics as determined by size and stowage factor (i.e. the ratio between the weight and volume of the cargo) permit them to be efficiently packed in containers. Many products in this category are also highly susceptible to deterioration and theft. Examples are wines and spirits, pharmaceutical products and tobacco.

Suitable: Generally includes products of medium value, whose freights are lower than for those classed as excellent, and that are somewhat less susceptible to damage and pilferage. Examples are wire products, coffee in sacks and cacao, as well as products that are easily contaminated (flour in bags) and or subject to surcharges in freight rates or port fees (uncured leathers and lampblack).

Marginal: Includes products that can be physically placed in containers but that are low in value and for which low freights are charged, as well as those of low susceptibility to deterioration or theft. Examples are steel and iron ingots, and unfinished wood.

Unsuitable: Products that cannot be physically packed in containers, such as scrap iron, large trucks and structural steel over 40 ft long, or products like sugar or automobiles that can generally be transported more efficiently in large volumes by specialized carriers.

6. Ports

It is impossible to speak of maritime transport without referring to ports, which are an essential factor in the movement of goods by sea. According to Webster's Seventh New Collegiate Dictionary, a port is "a place where ships may ride secure from storms," and where they "may take on or discharge cargo." Just as in the case of ships and the merchant marine, this definition is incomplete; a port is also a transfer station at which cargo changes its means of transport from land to sea or vice versa. It can even be said that a port is a pole for development, since historically ports

have been centres of commercial activity around which large cities have grown up—from Carthage in antiquity to London and New York today, to say nothing of Amsterdam, Hamburg, Liverpool or Marseilles.

Without going so far afield, it is worth recalling that the distinguished Chilean newspaper *El Mercurio* was founded in the first half of the last century in the port city of Valparaíso. The Pacific Steam Navigation Company, the first steamship line in the Pacific, was also born there 150 years ago in the restless mind of that great North American entrepreneur William Wheelwright. The first Chilean bank was founded there, the first stock exchange, the first insurance company and the first fire brigade, as well as the first gas-lighting system and the first Chilean lighthouse. Valparaíso was where the head offices of various large mining companies of Bolivia and Chile were located, together with those of the company which built the Caldera to Copiapó railway, the first in a South American republic. The Peru Liberation Squadron that ended Spanish domination in the Pacific set sail from the Bay of Valparaíso, as did copra dealers for Polynesia, gold seekers for California, and missionaries and settlers for Easter Island.

A clear and concise definition of a port was given by the Port Company of Brazil, Ltd. (PORTOBRAS) in a recent advertisement: "A port is not a warehouse or a depot; *a port is a service*".¹³ It is both that simple and that complex.

Of course, there are different kinds of commercial ports: general ports, which serve all kinds of vessels and deal with all kinds of cargoes; bulk ports, which move solid bulk cargo such as coal, ores or grains; container ports, etc. Ports also have different characteristics: they can be peaceful, such as Asunción; legendary, such as Cartagena; efficient, such as Guayaquil, one of the few maritime terminals in the world that operates every day of the year, in three shifts, all for same rates of user charges; beautiful, such as Rio de Janeiro, "the marvelous city"; or attractive, such as Valparaíso, known in its heyday as the "pearl of the Pacific".

All differ in their organization, capacity and productivity, but all have common objectives and share certain problems. Their goal is clear: provide the best possible service for vessels and their cargoes. Their problems are dual—material and institutional—and are faced to a greater or lesser extent by all ports in the world. Some of the material problems are lack of berth space, shallowness and periodic silting, lack of suitable cargo-handling equipment, and insufficient maneuvering space and storage yards for containers. The main institutional problems include obsolete and imprecise legislation, excess paperwork and red tape that slow down port operations and make them more expensive, and labour problems such as inefficiency, work stoppages, strikes, slow-downs, and the like. In recent years, certain new problems have been

added to the traditional ones, including pollution, control of oil spills and, in large ports, the need for maritime traffic safety systems.

Just as ports have different geographical, topographical, geopolitical, climatic, economic and other characteristics, the way they are organized varies considerably from one country to another, and even within a single country. In Europe, for example, port authorities may be national, municipal, private or mixed. In the United States, there is a trend towards a combined structure, run by Federal and state commissions, but the most typical ports are municipal; there are also bistate ports, such as the Port Authority of New York and New Jersey and the Delaware River Port Authority.

In Latin America, the principle of public ownership, which derives from Roman law and is enshrined in constitutions, establishes that the State is the owner of the land on which ports are built. Therefore, up to the middle of this century, most ports in this region came under the Customs authorities. In general, the philosophy of the "King's Customs" prevailed, inherited from colonial times, under which Customs duties were the main source of government income. After the end of World War II, and thanks in part to the requisites laid down by the World Bank for the concession of loans for port improvements, almost all Latin American countries have set up authorities having some degree of operating autonomy. Although these authorities are constituted and organized in different ways, there is one basic similarity among all of them: they are controlled by the central government. Some have nationwide jurisdiction over all ports, while others have only local or regional responsibility.

It should be remembered that ocean transport is a two-ended activity, i.e. always conducted between a port of loading and a port of destination, so that both ports are necessarily interdependent. Therefore, greater or lesser efficiency at one of the terminals inevitably has an impact on the other that can adversely affect shipping companies, a situation shippers do not always understand.

Port costs account for 50% to 60% of total liner freight rates, depending on the type and volume of the cargo, and include handling (reception, delivery, control of loading and unloading) and fixed costs (amortization, depreciation, interest and administrative expenses) as well as port dues and wharfage. This high percentage is due to the fact that conventional liners generally spend two-thirds of their time in port and only one-third at sea. Thus there are numerous possibilities for reducing overall shipping costs by reducing the port component. Nowadays, however, the focus is more and more on multimodal transport, since what shippers are really interested in is the total cost of transporting their cargo from the point of shipment to the point of final destination, including the stretches between the inland city of origin and the port

of loading, on the one hand, and between the port of offloading and the inland terminal city, on the other.

7. Composition of the shipping industry

Prior to examining the structure of the world fleet, its development and trends in recent years, mention should be made of the different tonnages used to measure vessels, since confusion often exists with regard to these concepts, and the word ton is sometimes used with no qualifier. (It should be noted that the word ton and its derivatives such as tonnage, so widely used in sea trade, comes from the middle ages when the main commodities such as oil, herring and wine were carried in barrels called tunnes.) The following definitions are taken from Lloyd's *Register of Ships*, 1986-87 edition.

Gross registered tonnage (grt). Broadly speaking, this is the capacity of all spaces within the hull of a vessel, together with most of the enclosed space above deck available for loading cargo, stores, fuel, passengers and crew. "Tonnage" is expressed in units of 100 ft³ (2.83 m³), so that one grt equals 100 ft³. This system is based on rules proposed in 1854 by the British Parliamentarian George Moorson.

Net registered tonnage (nrt). This is again a measurement of volume, derived from the gross tonnage by deducting the space for the accommodation of the master, officers, crew, navigation and propelling machinery.

Deadweight (dwt). This is the weight in metric or long tons of cargo, stores, fuel, passengers and crew that can be carried by the ship when loaded to her maximum summer load line.

In Latin America, the main source of systematic information on the shipping industry is the Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI) (Institute for Latin American Merchant Marine Studies), a nonprofit institution created in 1964 with headquarters in Buenos Aires. Prior to 1980, IEMMI published the yearbook *La marina mercante iberoamericana* containing statistics on all vessels of 1 000 grt and over, together with information on fleet development and the texts of shipping legislation in the Latin American countries. From 1981 to 1984, IEMMI published jointly with the prestigious British firm Seatrade Publications, the yearbook *Latin American Shipping - La marina mercante iberoamericana - IEMMI - A Seatrade Guide* with the same detailed information on fleets in the region but not shipping legislation. Since 1985, the yearbook *La marina mercante iberoamericana* is once again being published independently by IEMMI.

With regard to the world as a whole, Lloyd's Register of Shipping's *Statistical Tables* show all vessels of over 100 grt registered as of 1 July of

each year, including not only merchant vessels (i.e., carriers involved in the commercial transport of cargo and passengers) but also fishing boats, factory ships, scientific and oceanographic vessels, icebreakers, cable ships, dredges, tugboats and non-trading vessels. On the other hand, the monthly statistics published by the Institute of Shipping Economics and Logistics (ISL) refer only to commercial vessels of 300 grt and over. The differences between these two widely-used sources of statistics on merchant fleets are emphasized in order to avoid the errors or mistaken interpretations that occur if this information is not analyzed properly or if complete statistics are not published, as happens occasionally. This explains why the data for similar periods published by each source are not the same:

<i>Item</i>	<i>Lloyd's</i> ¹⁴ (world totals as of 1 July 1986)	<i>ISL</i> ¹⁵
Number of vessels	75 266	34 257
Grt	404 910 267	373 766 800
Dwt	647 638 636	617 687 600

ISL statistics for 1986, compared with those for 1984 (34 178 vessels of 641.3 million dwt), indicate that there has been a decrease in world tonnage of 3.7%. Table 2 shows the growth of the world fleet since 1900—and its marginal decline since 1983—based on Lloyd's figures.

Table 2
GROWTH OF WORLD FLEET

<i>Year</i>	<i>Number of vessels</i>	<i>Dwt (1 000)</i>
1900	27 616	43 333
1930	32 713	104 411
1960	36 311	194 670
1970	52 444	338 839
1982	74 151	707 930
1983	76 106	654 512
1984	76 068	657 266
1986	75 266	647 639

Source: Lloyd's Register of Shipping, *Statistical Tables 1986*, London, 1986.

Note that it took some 30 years for floating tonnage to double, from 1900 to 1930 and again from 1930 to 1960. Since 1970, however, the growth rate has been so rapid that tonnage doubled in only 12 years. It is thus not surprising that in recent years a great excess of cargo space has developed that has brought many vessels to a standstill. Laid-up tonnage began to increase in early 1974 as a consequence of the oil crisis, and reached its maximum in August 1983 with 1 436 vessels of 87 million

dwt. These figures had dropped by December 1986 to 633 ships of 21.5 million dwt capacity, 14.8 million of which corresponded to tankers and 6.7 million to dry-cargo vessels. Between January and December 1986, 1 476 vessels of 21.2 million dwt were broken up for scrap, while casualties eliminated an additional 2.2 million dwt. Construction orders for cargo vessels placed in the same year totalled 808 vessels of 20.3 million dwt.¹⁶

Another source of data at the world level is the Norwegian firm Fearnley and Egers Chartering Company, Ltd., of Oslo, which prepares annual statistics on the fleets of bulk and combined carriers that include data on vessels of 10 000 dwt and over. The Maritime Administration of the United States Department of Transportation also processes annual statistics on world merchant fleets, based on carriers of 1 000 dwt and over.

Table 3 shows the 53 countries with fleets over one million dwt, which together totaled 613 million dwt, more than 98% of the world's shipping capacity.

A striking fact about table 3 is that it shows no relationship between the economic power of the countries appearing in it and the capacity of their merchant marines. For example, the United States, the main world power, is in sixth place with 24.5 million dwt, and the USSR, the second world power, is fifth with close to 24.9 million dwt. Aside from the case of flags of convenience —Liberia in first place with 99 million dwt and Panama in second with 67 million dwt— to which reference has already been made, the important place occupied by the fleets of certain small countries must be pointed out. Greece, with a much smaller territory and population than the great powers, is in fourth place, while certain developing countries such as the Philippines (tenth), Singapore (14th), the Republic of Korea (16th) and India (18th) figure prominently in the table as well.

Note that among the 31 maritime powers possessing over four million dwt each, the only one from Latin America (aside from Panama, an open-registry country) is Brazil, in 17th place. Although not shown in table 3, other important regional fleets are those of Peru (54th), Chile (58th), Honduras (62nd), Colombia (65th) and Ecuador (67th), each with more than half a million tons.

Lloyd's Register of Shipping also prepares an analysis of the world's merchant fleets based on the main types of vessels, as shown in table 4.

Shipping services are divided into three main categories: liner, tramp, and private or industrial transport. Although these categories differ with regard to the services offered to users, the cargoes they carry and, to a certain extent, the kind of vessels employed, many of them also overlap. A company may at times use a ship for liner traffic and at other times as a tramp, depending on market conditions. In turn, some industrial vessels may occasionally operate as liners.

Table 3

**PRINCIPAL MERCHANT MARINES OF THE WORLD
AS OF 1 JANUARY 1985^a**

<i>Order number</i>	<i>Flag</i>	<i>No. of vessels</i>	<i>DWT (1 000)</i>	<i>GRT (1 000)</i>	<i>TEU (1 000)</i>	<i>DWT % total</i>
1	Liberia ^b	1 523	98 502.4	51 280.5	85.9	16.1
2	Panama ^b	3 960	67 444.6	40 660.3	313.8	11.0
3	Japan	4 062	55 488.1	35 094.1	124.9	9.0
4	Greece	1 715	46 215.6	25 445.0	80.4	7.5
5	USSR	2 718	24 873.1	18 627.5	107.0	4.1
6	United States ^c	819	24 537.3	16 470.7	207.5	4.0
7	Cyprus ^b	1 097	21 319.2	12 221.4	57.7	3.5
8	China	1 338	17 628.6	11 615.6	64.9	2.9
9	Hong Kong	296	13 460.1	8 093.4	63.0	2.2
10	Philippines	785	12 993.6	7 612.7	29.8	2.1
11	Bahamas ^b	227	12 807.7	7 154.7	18.9	2.1
12	United Kingdom ^d	712	12 538.8	8 496.6	101.1	2.0
13	Italy	869	12 005.3	7 497.6	35.3	2.0
14	Singapore	485	11 562.0	6 787.8	68.3	1.9
15	Norway	623	10 825.1	6 979.7	36.9	1.8
16	Korea, Republic of	653	10 655.0	6 343.2	31.5	1.7
17	Brazil	407	10 217.3	6 118.6	29.8	1.7
18	India	369	10 155.3	6 087.9	14.8	1.7
19	France ^e	276	8 069.9	5 052.1	73.8	1.3
20	Spain	555	8 065.7	4 409.6	23.1	1.3
21	Iran	173	7 169.9	3 875.3	5.4	1.2
22	Denmark ^f	470	6 929.0	4 663.8	82.9	1.1
23	Taiwan	231	6 738.5	4 307.2	95.4	1.1
24	Germany, Fed. Republic of	990	5 795.9	4 258.1	232.4	0.9
25	Turkey	644	5 317.0	3 190.8	4.0	0.9
26	Netherlands ^g	581	4 804.8	3 366.9	75.3	0.8
27	Rumania	286	4 773.8	3 081.2	14.4	0.8
28	Gibraltar	88	4 678.1	2 437.4	3.0	0.8
29	Saudi Arabia	191	4 644.0	2 685.6	18.2	0.8
30	Yugoslavia	330	4 632.5	2 949.1	24.5	0.8
31	Poland	301	4 527.0	3 151.7	20.0	0.7
32	Belgium	106	3 774.2	2 258.4	26.7	0.6
33	Australia	109	3 704.1	2 272.1	11.5	0.6
34	Kuwait	80	3 255.4	2 137.5	17.3	0.5
35	Argentina	198	3 022.4	1 930.5	10.7	0.5
36	Indonesia	763	2 677.4	1 792.2	10.8	0.4
37	Sweden	301	2 652.0	2 189.3	39.4	0.4
38	Malaysia	298	2 411.1	1 655.2	13.9	0.4

Table 3 (concluded)

Order number	Flag	No. of vessels	DWT (1 000)	GRT (1 000)	TEU (1 000)	DWT % total
39	Bermuda ^b	85	2 247.1	1 478.1	17.4	0.4
40	Málta	172	2 140.4	1 276.8	1.3	0.3
41	Bulgaria	123	1 959.4	1 302.5	6.1	0.3
42	Mexico	101	1 857.8	1 203.7	6.4	0.3
43	German Democratic Rep.	180	1 806.8	1 354.6	18.3	0.3
44	Cayman Islands ^b	157	1 771.9	1 064.9	12.6	0.3
45	Portugal ^b	89	1 642.5	937.2	2.0	0.3
46	Finland	132	1 547.9	1 200.9	12.3	0.3
47	Iraq	39	1 546.1	851.3	0.4	0.3
48	Libyan Arab Jamahiriya	36	1 441.5	797.1	1.6	0.2
49	Egypt	196	1 376.7	941.4	2.7	0.2
50	Venezuela	109	1 348.0	896.2	3.7	0.2
51	Cuba	126	1 157.8	825.0	10.4	0.2
52	United Arab Emirates	93	1 024.9	634.1	8.4	0.2
53	Algeria	75	1 012.1	863.9	1.4	0.2
	Subtotal	31 342	594 752.7	359 879.0	2 379.2	97.0
54/149	Remaining countries	2 726	18 388.8	12 395.5	126.6	3.0
	World total	34 068	613 141.5	372 274.5	2 505.8	100.0

Source: Institute of Shipping Economics and Logistics, (ISL), *Shipping Statistics*. Vol. 31, Nº 2, Bremen, February 1987, pp. 11-14.

^aVessels of 300 grt and over. ^bOpen registry or flag of convenience. ^cIncludes Pacific Islands Trust Territory and Puerto Rico. ^dIncludes British Virgin Islands, the Isle of Man and Montserrat. ^eIncludes French Polynesia, Guadeloupe, Martinique, New Caledonia and St. Pierre et Miquelon. ^fIncludes Faeroe Islands and Greenland. ^gIncludes Netherlands Antilles. ^hIncludes Macau.

As has been said, liners offer their space to any shipper, at preset rates, for the transport of general or break-bulk cargo and for unitized cargo between a chain of ports. For the most part, the vessels used are general cargo carriers, multipurpose carriers, container carriers, Ro-Ros and barge carriers. Due to the considerable capital investment required for container operations, this service is frequently handled by a consortium of two or more liner companies. Most companies that offer liner services are grouped into cartels known as freight conferences or shipping conferences, which will be dealt with below.

Tramp ships have been defined as cargo vessels that do not operate in any regular traffic but which instead take cargo wherever shippers

Table 4

ANALYSIS OF THE WORLD FLEET BY PRINCIPAL TYPES OF SHIPS, 1984-1985

(Millions of grt)

Main types	1984		1985	
	Number	GRT	Number	GRT
Tankers	6 288	144 380	5 985	124 140
Bulk and ore carriers	4 829	103 681	4 926	111 641
Common freighters	21 608	76 315	20 249	72 659
Bulk/oil carriers	400	24 653	348	21 267
Cellular containerships and LASH carriers	940	16 913	1 064	19 609
Gas carriers	775	9 884	770	9 832
Cargo & passenger ferries	3 739	8 230	3 870	8 811
Vehicle carriers	329	3 870	320	4 387
Oil/chemical tankers	359	3 083	505	4 286
Chemical products tankers	847	3 391	861	3 560
Passenger/cargo ships	189	799	154	586
Livestock carriers	119	446	104	386
Misc. products carriers	145	278	148	255
Supply ships	2 061	1 251	2 167	1 364
Total merchant vessels	42 628	397 239	41 471	382 283
Remaining vessels ^a	33 440	21 443	33 795	22 627
World total	76 068	418 682	75 266	404 910

Source: Lloyd's Register of Shipping, *Statistical Tables 1984* and *Statistical Tables 1985*, London, 1984 and 1985, respectively.

^aIncludes dredges, factory ships, fishing vessels, icebreakers, research ships, tugboats and other ships not involved in the commercial transport of cargo or passengers (nontrading ships).

wish, generally as full shipments between one port of loading and one or two ports of destination. Tramps are occasionally chartered by liner companies to deal with their surplus traffic. Rates depend on supply and demand, with those for charters to transport a given amount of cargo within a given period, as well as charters for three years or more, generally being set through direct negotiations or through a broker. Contracts for single voyages and those for one year or less, on the other hand, are usually transacted on a shipping exchange such as London's Baltic Shipping Exchange.

Industrial or private operations are characterized by the fact that they are captive services in which both the vessel and the cargo are controlled by a single enterprise. Bareboat (i.e., without crew) charters by industrial operators are managed as if the vessel were their own.

According to some estimates, liners generate about one-half of gross earnings from freight in the shipping industry, in spite of the fact that they represent only one-quarter of the tonnage.¹⁷ This is because liners carry general cargo composed for the most part of manufactured or semimanufactured products whose rates must compensate for empty space, while tramp and industrial vessels more often transport raw or bulk materials of lower intrinsic value.

It is difficult to make a precise distinction between liners and tramps. For this reason, when inaugurating a system of subsidies for traders in 1935, Great Britain was forced to lay down a complex set of rules to limit eligibility. An English author who is a specialist in this subject has said:

"Strictly speaking, a liner service implies today a fleet of ships, under common ownership or management, which provides a fixed service, at regular intervals, between named ports, and offer themselves as common carriers of any goods or passengers requiring shipment between those ports and ready for transit by their sailing dates. A fixed itinerary, inclusion in a regular service, and the obligation to accept cargo from all comers and to sail, whether filled or not, on the date fixed by a published schedule; these, and not the size and speed of the ships nor the number of vessels in the fleet are what distinguish the 'liner' from the 'tramp,' 'seeker,' or 'general trader' —the ship which can be hired as a whole, by the voyage or the month, to load such cargo and to carry it between such ports as the charterer may require".¹⁸

The current excess of hold space, which has already been referred to, is not a new or unusual phenomenon. The shipping industry is highly cyclical, and its ups and downs are the consequence of a series of factors such as wars or international conflicts (or the threat of conflict, as was the case with the Suez Canal crisis), the size of harvests, the influence of the weather, the discovery of new sources of raw materials, and —especially— world prosperity or economic recession, over which it has no control. Thus, in the last half century, there were at least two periods of crisis prior to the current one that forced the paralyzation of a high percentage of the fleet: on 1 January 1922, 10.9 million grt (17% of the world total) were idle, while on the same date in 1933, the figure was 12.6 million grt (18%).¹⁹ Naturally, these periods of depression in shipping activity are reflected in rates, in particular those of tramps, which are much more susceptible than liners to changes in the market.

Table 5 shows variations in the general index for time charter contracts and in the transport of grains. In general, there was a rising trend up to 1980, the year which saw the highest indexes for the six-year period considered: 402.0 for the general index, 369.4 for one- or two-month charters, 318.5 for charters of more than six months, and 423.1 for

Table 5

FLUCTUATION IN WORLD FREIGHT RATES, 1979-1984

(January-December 1972 = 100)

Date	General index	Time charters		Grain
		1-2 months	Over 6 months	
May 1979	267.7 - 308.6	199.4 - 223.9	236.0 - 224.1	259.4 - 312.6
November 1979	356.1 - 368.9	309.8 - 296.9	280.3 - 250.4	363.7 - 379.0
May 1980	304.0 - 394.4	355.3 - 369.4	301.7 - 296.7	397.7 - 404.1
December 1980	396.4 - 402.0	321.1 - 309.3	314.9 - 318.5	416.6 - 423.1
May 1981	343.1 - 323.3	279.2 - 248.6	298.7 - 293.7	352.1 - 329.0
December 1981	272.4 - 261.3	200.0 - 173.0	221.1 - 211.0	269.4 - 256.4
July 1982	221.3 - 196.8	147.5 - 140.2	208.6 - 198.7	215.3 - 186.9
December 1982	207.1 - 204.4	173.6 - 168.5	200.7 - 191.4	202.4 - 198.8
May 1983	243.2 - 240.5	182.9 - 192.4	211.2 - 218.8	236.2 - 231.9
December 1983	219.9 - 219.0	187.1 - 169.1	218.2 - 218.2	213.7 - 212.9
May 1984	227.7 - 234.5	190.7 - 200.3	226.4 - 233.7	221.1 - 229.0
December 1984	217.1 - 221.0	191.0 - 203.7	236.3 - 238.3	206.1 - 211.0
May 1985	232.2 - 220.1	195.8 - 189.9	221.8 - 220.5	222.6 - 209.2
December 1985	204.1 - 204.5	180.0 - 177.0	216.2 - 216.2	191.6 - 190.9
May 1986	166.2 - 187.6	154.5 - 160.0	210.2 - 206.9	151.5 - 153.1
December 1986	170.2 - 165.9	158.7 - 160.4	211.9 - 211.9	159.5 - 155.0

Source: Maritime Research, Inc., New Jersey, as published in Institute of Shipping Economics and Logistics (ISL), *Shipping Statistics*, in different volumes from December 1979 to January 1987.

Note: Figures in boldface indicate the extremes for each category in the eight-year period under consideration.

the transport of grain, with base 100 in January-December 1972. Rates began to drop after 1980, falling to a minimum in 1982 with 196.8 for the general index, 140.2 for one- and two-month charters, 191.4 for charters longer than six months, and 186.9 for the transport of grain. Since then, the indexes have begun to improve again, although the trend is erratic. Rates for liners, on the other hand, show a moderate but steady rising trend, as can be seen in table 6, whose figures are taken from an index prepared by the Ministry of Transport of the Federal Republic of Germany on the basis of freight rates charged for goods loaded and unloaded by liners of all flags at ports in the Antwerp-Hamburg range.

Table 6
INDEX OF LINER FREIGHT RATES, 1973-1984
(1965 = 100)

<i>Year</i>	<i>Index</i>
1973	140
1974	187
1975	204
1976	215
1977	229
1978	241
1979	267
1980	286
1981	315
1982	321
1983	319
1984	407

Source: UNCTAD, *Review of Maritime Transport*, 1976, 1978, 1982, 1983 and 1984 (TD/B/C.4/169/Rev.1, 1978, TD/B/C.4/182, May 1979; TD/B/C.4/258, May 1983, TD/B/C.4/266, 25 April 1984; and TD/B/C.4/289, 1985, respectively).

8. Shipping conferences

Shipping conferences—or freight conferences, as they are also called—are cartels of shipowners whose main objectives are to set uniform freight rates and transport conditions, to rationalize itineraries and, in some cases, to reach cargo distribution agreements, apportion freights or prorate profits with a view to avoiding ruinous competition among shipping lines that operate in the same international traffic. The history of conferences goes back to the time when steam first became widely used in navigation, which led to regular services and a need to control competition among shipping companies. The first conference was established in 1863 between Liverpool and New York. In the 1870s, when thousands of sailing ships were still active, there was an excess of space afloat, aggravated by the opening of the Suez Canal in 1869, which led to a freight war in the traffic between Europe and India. To avoid general ruin, shipowners formed the Calcutta Conference in 1875, which was quickly followed by the Australia and China Conferences, and by the West Coast of South America Freight Conference in 1904. Today there are approximately 360 conferences in the world, and almost all the companies that offer liner services are affiliated with one or more of them. Nonetheless, some major lines have recently opted to act independently.

Conferences have three main objectives:

Engage in joint activities to compete against non conference carriers, eliminating such outside competition through the use of loyalty

agreements or fidelity contracts and, when they consider it necessary, "fighting ships", i.e. vessels assigned to a given traffic to challenge independent companies by charging lower rates until the latter are ruined or forced off the route;

Regulate competition among their members, basically through conference agreements, and

Provide regular service on a route, using seaworthy vessels suited to the traffic.

A conference agreement is a pact that establishes rules of conduct, regulations, supervision and control of activities, and contractual relationships among the member lines to prevent competition among them and to confront other lines. Agreements are confidential, for the most part, but in the United States they must be submitted to the Federal Maritime Commission and therefore become public. They may differ from one conference to another, but generally speaking they cover the following subjects:

Geographic area in which the conference will operate;

Types of members, usually classified as full or associate;

Conditions for entry, withdrawal, suspension or expulsion of the members, including a guarantee of good conduct;

Obligation to charge uniform freight rates;

Percentages of cargo which can be carried by the different members, according to the ports of loading and destination;

System of distribution, in the case of profit sharing ("full money") pools, depending on the services provided;

Rules and procedures for meetings and voting within the conference; appointment of committees and the structure and operations of the secretariat;

System of arbitration among the members to overcome any differences that may arise, and

Sanctions for abusive practices such as calculating or collecting freights not provided for in the schedules, making payments which should be borne by the shippers, postdating or predating bills of lading, providing free storage for shippers, and paying brokerage fees not included in the agreement.

The ability of conferences to attract and keep their clientele lies in their offering to regular customers a discount on rates or a deferred rebate system, consisting of returning a percentage of the freight —generally between 8% and 10%— after a loyalty period of at least six months during which the shipper does not dispatch cargo in nonconference ships.

It must be recognized that the conference system has certain advantages for business. Fixed rates over a reasonable period —usually one year— give businessmen a degree of confidence about the future costs of

transporting their merchandise. Equal treatment for all regular users assures an importer bidding on a contract that his competitor will not be in a better position due to lower rates. The guarantee of stable service allows users to plan import and export dates. The ships are seaworthy and are usually appropriate for the needs of the traffic. As for the shipowners themselves, the system avoids rate wars that would bankrupt many of them, and allows them to maintain adequate service and to program the expansion or renovation of their fleets because they can count on regular cargo for their vessels at stable freight rates.

On the other hand, the conference system has drawbacks that have led to almost universal criticism, such as monopolistic tendencies, unchecked power to set shipping rates and conditions, the obstacles that "closed" conferences place in the path of would-be new members, and other arbitrary actions and discriminatory practices. This is why conferences have been subject to a series of government inquiries in various countries such as Australia, Canada, the United Kingdom and the United States. For example, Australia conducted a study of overseas shipping conferences in 1929. In the United Kingdom, one intensive study was made in 1908 by the Royal Commission on Shipping Rings, and another from 1967 to 1970 by the Rochdale Parliamentary Committee. In the United States, the Alexander Congressional Committee sat from 1914 to 1916, and the Bonner hearings lasted from 1961 to 1963. All these hearings concluded that, despite of their deficiencies, conferences are useful in maintaining regular shipping services and stable rates, and they were thus exempted from antimonopoly regulations.

There has been concern in Latin America for many years over the excessive power wielded by the conferences that serve its extracontinental traffic, their general unwillingness to take Latin American interests into account and, in particular, their failure to promote the export of manufactured and semimanufactured products. The countries of the region have lodged repeated complaints in international forums that certain conferences do not publish their freight rates, and tend to increase them without advance notice. The Organization of American States (OAS) studied the matter in 1957 and made a number of recommendations, especially regarding the mandatory registration of freight rates with the competent authorities. The same concern has been expressed on other occasions in the OAS and also within the former Latin American Free Trade Association (now LAIA). The problem was taken to the United Nations Conference on Trade and Development (UNCTAD) at its first meeting (Geneva, 1964), which adopted a resolution proposed by the Latin American Group aimed at creating a system for consultations between the conferences and shippers' organizations, at the national and regional levels, that would negotiate on different matters such as publishing freight rates, increasing rates, and rationalizing services.

Because of the criticisms of conference actions voiced at UNCTAD, the Ministers of Transport of Western Europe and Japan, meeting in Tokyo in 1971, agreed that it was necessary to draw up regulations to improve the way in which conferences operate. They therefore instructed the Council of European and Japanese National Shipowners (CENSA) to prepare a code of conference practices. Although this code contained a number of fundamental principles and was approved by European national shippers' councils, developing countries refused to accept it because they had not taken part in its preparation. Instead, they decided to press for a new code developed within the framework of the United Nations.

9. The Code of Conduct for Liner Conferences

In response to pressure by countries of the Group of 77 led by the Latin American Group, the third meeting of UNCTAD (Santiago, Chile, 1972) agreed to request that the United Nations General Assembly set up a preparatory commission to prepare a draft Code of Conduct for Liner Conferences which would be compulsory in nature, and call a conference of plenipotentiaries to adopt it. The General Assembly agreed to the request and, in Resolution 3035 (XXVII) of 19 December 1972, asked the Secretary General to convene, under the auspices of UNCTAD, such a conference "to consider and adopt a convention or any other multilateral legally binding instrument on a code of conduct for liner conferences."

The conference of plenipotentiaries, preceded by two meetings of the preparatory committee (January and June 1973), met in Geneva from 1 November to 15 December 1973 and from 11 March to 6 April 1974. On the latter date, the final act was signed by the representatives of 85 countries, with 73 votes in favour, seven against (Denmark, Finland, Norway, Sweden, Switzerland, the United Kingdom and the United States) and five abstentions (Canada, Greece, Italy, the Netherlands and New Zealand). To come into force, it required ratification by at least 24 contracting parties representing no less than 25% of gross world tonnage.

The Convention only became effective on 6 October 1983, six months after the world tonnage requirement had been complied with, despite the fact that the number of ratifying countries had been reached several years earlier. At present, 66 countries are contracting parties to the Convention, representing 44.8% of world gross tonnage, including 13 Latin American and Caribbean countries: Barbados, Chile, Costa Rica, Cuba, Guatemala, Guyana, Honduras, Jamaica, Mexico, Peru, Trinidad and Tobago, Uruguay, and Venezuela. Others are China, Denmark, the Federal Republic of Germany, the German Democratic Republic, India, Indonesia, the Republic of Korea, the Netherlands, Norway, Sweden, the

Union of Soviet Socialist Republics, the United Kingdom and Yugoslavia, to mention only those having fairly important merchant fleets.

The main objectives of the Code of Conduct are to facilitate the orderly growth of world maritime trade, promote the development of regular and efficient shipping services, and guarantee a balance between the interests of shipowners and shippers. Its basic principles are nondiscrimination in conference practices, consultations with shippers' organizations, availability of pertinent information on conference activities, and the right of all national shipping companies to be full members of a conference that serves their country's foreign trade. It regulates relations of conference members both among themselves and with shippers, establishes equitable procedures for the use of loyalty arrangements, and requires mandatory consultations between conferences and shippers' organizations on matters of concern to the latter. It also contains provisions regulating freight-rate increases, promotional freight rates, and adjustment factors for exchange rates. The entire second half of the Code is devoted to mechanisms for settling disputes regarding the application or operation of the Code's provisions.

The Code guarantees the right of equal shares in traffic to the two countries that generate it. Nonetheless, according to Article 2, paragraph 4 (b), "Third-country shipping lines, if any, shall have the right to acquire a significant part, such as 20 per cent, in the freight and volume of traffic generated in that trade." This is what has been called the 40-40-20 principle, under which 40% of freight rates and cargo volumes are allocated to vessels of the importing country, 40% to those of the exporting country, and the remaining 20% to third-country ships.

The relative advantages and disadvantages of the Code of Conduct have been and continue to be controversial, since they depend on the perspective from which they are viewed. The principal maritime powers have seen in this international legal instrument a risk of losing the domination over shipping that they have exercised for so long, either directly or through open registry flags, most of whose tonnage is in the hands of Greece, Japan and the United States. They have thus opposed having the Code deal with the subject of cargo distribution, arguing that such a measure would hamper free competition, restrict the natural right of shippers to choose, and thereby contribute to higher freight rates. Paradoxically, the monopolistic nature of the conferences, which existed prior to the Code, is precisely what caused the Code to be proposed in the first place.

Perhaps the only valid criticism currently being made of the Code is that it is out of date with regard to container and multimodal transport. It should be remembered, however, that the Code was debated between 1972 and 1974 when these new transport technologies were in early stages of development. The problems that have arisen in this respect

could be dealt with under Article 11 on Consultation Machinery, which includes among matters that may be the subject of consultations, "Effects of the introduction of new technology in the carriage of cargo, in particular unitization, with consequent reduction of conventional service or loss of direct services." Also, in accordance with Article 52, a review conference is to be called five years after the Code enters into force "to review the working of the Convention, with particular reference to its implementation, and to consider and adopt appropriate amendments."

The Code is not a model of perfection. It was the fruit of difficult negotiations during which a series of compromises had to be made among the interests of the maritime powers, the large shipping companies, the developing countries and, to a lesser extent, the shippers. As a product of negotiation, the Code suffers from a certain amount of vagueness, a lack of clarity in certain articles, and some major omissions. On the other hand, even prior to its entry into force, the Code was influential in permitting the shipping companies of developing countries to gain a greater share of traffic. Even more important, it has served to moderate the arrogant attitudes of certain shipping conferences accustomed to imposing their conditions and exercising unrestrained power in those traffics where no government controls on shipping activities exist and where no shippers' councils have been recognized by the governments and the conferences.

In this regard, it is worthwhile noting that the BIMCO *Bulletin*, official voice of the Baltic and International Maritime Council, in its issue of November-December 1984 (No. 6/84), quoted an internal memorandum written by the Shipping Division of UNCTAD as pointing out that the Code provides an internationally acceptable regulatory framework within which international liner conferences may operate. It further considered that the Code would be an important instrument for attaining a more significant participation in shipping by developing countries, in accordance with the objectives for transport expressed in the International Development Strategy for the Third United Nations Development Decade.

The memorandum also expected the Code to be a crucial supporting measure for the realization of the two major maritime transport goals in the present decade, i.e., the attainment of structural changes in the shipping industry and of a 20% share of world tonnage for developing countries. With respect to liner shipping, the Code would play a dual role in achieving these goals by reducing the risk of investment while aiding developing countries' shipping lines to secure cargo, a support without which any attempt to increase tonnage would be useless. The memorandum further felt that the importance of the Code for the developing countries should not to be viewed in isolation but as part of a shipping policy package developed within UNCTAD that contains other important

elements aiming at the same goals, such as ship financing, ship registration, multimodal transport operations, model legislation, etc. Nonetheless, the Code is not limited in its application to just the developing countries, but rather is universal in character.

The importance attached by developing countries to the Code of Conduct was made clear at the Seminar on Foreign Trade and Shipping held in October 1984 in Mexico City and organized by the Mexican Foreign Trade Institute and the Mexican Association of Maritime Transport Users (AMUTMAC). This meeting, attended by 150 participants from 30 countries in America, Europe, Africa and Asia, included the following considerations in its final report:

- "1. The International Meeting on Foreign Trade and Shipping reaffirms the interrelationship between foreign trade and shipping and is convinced that the former must be developed in close relationship with and awareness of the problems of maritime transport.
- "2. The meeting has reached the conclusion that the Code of Conduct:
 - undoubtedly constitutes a valuable tool for creating and strengthening the merchant marines of developing countries by guaranteeing them access to an adequate share in the transport of the foreign trade generated by their countries; and
 - regulates the relations between shipping conferences and shippers and strives for a balance between the parties engaged in maritime trade.

Therefore, it recommends that the Governments which still have not done so, adhere as soon as possible to the United Nations Code of Conduct for Liner Conferences and actively apply it."

Nonetheless, application of the Code has thus far been limited, because several of the principal maritime powers such as Greece, Japan and the United States have not adhered to it. Neither have Argentina and Brazil, the two most important Latin American shipping countries, even though they were among the pioneers in its adoption, and signed the Convention in 1974.

It should be noted that, in 1979, the European Economic Community (EEC) adopted Council Rule No. 954/79, known as the Brussels Package, aimed at coordinating the accession of member nations to the Code and avoiding the conflicts of interest that would have arisen if some of them had accepted the Code and others had not. This rule stipulates that members of the EEC may participate in cargo distribution among European nations and nonmember countries of the Organisation for Economic Co-operation and Development (OECD), but not in EEC internal shipping conferences nor those of the OECD. In addition, the Brussels Package does not accept the provisions of Article 14 of the Code on the setting of freight rates.

The United States, one of the seven nations that voted against the Code of Conduct, has continued to oppose both it and the Brussels Package. The United States' opposition is based on defense of the open-conference system, in which each shipping line can join or withdraw at any time; on the fear that its vessels will not be as fairly treated in access to routes as third countries; and on a fundamental disagreement with the concept of cargo sharing. The U.S. Shipping Act of 1984, which entered into force in June 1984 after seven years of legislative debate, affirms and extends the provisions that exempt shipping conferences from rigid antimonopoly legislation, but contains important restrictions on the activities that can be carried out independently by shipping companies or through joint actions by conferences or groups of two or more common carriers.

In short, the potential framework of application for the Code of Conduct has shrunk considerably in the interim between its approval in 1974 and its entry into force in 1983. "It is estimated that whereas in 1974 conferences covered 90% of liner traffic moving on most trades, they now (1984) enjoy only about 65% to 80% of such cargoes, with their share falling as low as 50% in some markets."²⁰ The reason for this marked decrease in the conferences' share of liner traffic is not fully understood, but may be due in part to the withdrawal of some major lines from conferences, to the increased volume of containerized cargo, or to inroads made by large shipping companies into containerized traffic throughout the world. The principal independent lines that compete with shipping conferences are the following:

- Evergreen Maritime Corporation of Taiwan, which offers two round-the-world container services, one eastbound and the other westbound, with 24 modern container ships having a capacity of 2 800 TEU each;
- Yan-Ming, a state-owned company also of Taiwan, which operates four large container carriers between the Far East and Europe and has taken 20% of Taiwan's export cargo away from the Far East Freight Conference;
- ABC of Belgium, which serves European-Australian traffic;
- Westwood Shipping of the United States, which operates on the United States Pacific Coast to Japan and Hong Kong route, and
- Baltic Shipping Company of the USSR and SCAN Pacific Lines of Finland, which together have been lowering freight rates in the traffic from Europe to the Caribbean to such an extent that the Association of West Indies Transatlantic Steamship Liners has agreed to give them both tolerated outsider status.

Another factor that may have influenced the loss of cargo by conferences is new shipping transport technology, especially the unitization of cargoes. Until three decades ago, the shipping business was

personalized, and shipowners took pains to offer the best and most careful service for the handling of delicate goods, thereby gaining the allegiance of clients. Today, when containers themselves are a guarantee that the products carried in them will be treated carefully, shippers are almost indifferent as to what company they use. The world recession, which has caused a drop in the movement of general cargo by sea, an increase in transshipment and greater use of land bridges on international routes, must also have influenced the drop in conference traffic.

It should be remembered that the Code of Conduct for Liner Conferences, as its name indicates, applies solely to the activities of these cartels and not to nonconference lines. This is evidenced by Resolution No. 2, adopted concurrently with the Code on 6 April 1974 by 60 votes in favour, one against and 10 abstentions, which establishes that:

- "1. Nothing in that Convention shall be construed so as to deny shippers an option in the choice between conference shipping lines and non-conference shipping lines subject to any loyalty arrangements where they exist;
- "2. Non-conference shipping lines competing with a conference should adhere to the principle of fair competition on a commercial basis;
- "3. In the interest of sound development of liner shipping service, non-conference shipping lines should not be prevented from operating as long as they comply with the provisions of paragraph 2 above."

It should also be kept in mind that the provisions of the Code apply to consortiums of shipping companies, in accordance with the following definition of conferences given in Part One of the Annexes to the Final Act:

"A group of two or more vessel-operating carriers which provides international liner services for the carriage of cargo on a particular route or routes within specified geographical limits and which has an agreement or arrangement, whatever its nature, within the framework of which they operate under uniform or common freight rates and any other agreed conditions with respect to the provision of liner services."

A shipping consortium meets this definition because it is a group of shipping companies that maintain their legal independence as such, but that band together to regularly serve a given route and act under specific agreements as to freight rates and shipping conditions. Therefore, it would neither be possible nor desirable for large shipping consortiums to avoid operating according to the rules imposed by the Code of Conduct for Liner Conferences.

10. The Consultation System

According to UNCTAD, "Consultation machinery is an organized collective negotiating system in the field of shipping with a view to reaching joint decisions or recommendations on matters of common interest to shippers and shipowners."²¹ Consultation, which can be a useful instrument for increasing the uniformity of rate structures, transport conditions, surcharges, port problems and the like, was created because the parties involved lacked ways to communicate on important matters, and because shippers were not receiving sufficient information. The consultation system must be permanent in nature and operate on the basis of a dialogue among the parties. It should not be viewed as a forum for lodging complaints against conferences, but as a means for learning about the problems of the other parties as a basis for negotiating with a certain degree of flexibility.

Article 11, paragraph 2 of the Code of Conduct establishes mechanisms for holding consultations on questions of mutual interest between the conferences and shippers' organizations or representatives of the shippers. The following matters, among others, may form the subject of consultations:

- "a) Changes in general tariff conditions and related regulations;
- "b) Changes in the general level tariff rates and rates for major commodities;
- "c) Promotional and/or special freight rates;
- "d) Imposition of, and related changes in, surcharges;
- "e) Loyalty arrangements, their establishment or changes in their form and general conditions;
- "f) Changes in the tariff classification of ports;
- "g) Procedures for the supply of necessary information by shippers concerning the expected volume and nature of their cargoes; and
- "h) Presentation of cargo for shipment and the requirements regarding notice of cargo availability."

Article 11, paragraph 3 provides that the following may also be matters for consultation:

- "a) Operation of cargo inspection services;
- "b) Changes in the pattern of services;
- "c) Effects of the introduction of new technology in the carriage of cargo, in particular unitization, with consequent reduction of conventional service or loss of direct services; and
- "d) Adequacy and quality of shipping services, including the impact of pooling, berthing or sailing arrangements on the availability of shipping services and freight rates at which shipping services are provided; changes in the areas served and in the regularity of calls by conference vessels."

In Part One of the Code, a shippers' organization is defined as follows:

"An association or equivalent body which promotes, represents and protects the interests of shippers and, if those authorities so desire, is recognized in that capacity by the appropriate authority or authorities of the country whose shippers it represents".

Shippers' councils do not limit their activities to consulting and negotiating with freight conferences. They also act in representation of their members before port, Customs and administrative authorities of the port or region they serve. Shippers' councils, like conferences, have the common goal of helping to improve shipping services and consequently foreign trade. They thus face common problems such as excess paperwork and red tape, port deficiencies, excessive government intervention, and the introduction of new shipping technologies, and can provide valuable help in solving them.

According to UNCTAD, there are four main principles on which shippers' councils must be based to fully carry out their functions:

- i) they must be truly representative, i.e. composed of genuine spokesmen for the interests they are representing;
- ii) they must be recognized by public officials as representatives of a common interest;
- iii) their negotiating strength will depend on the degree of recognition they win from the respective shipping conferences; and
- iv) they must have a permanent body that deals exclusively with their specific functions.

The need for shippers' councils is fully justified for a number of reasons. Individual shippers are unable to effectively influence liner conferences or national authorities. The many problems that burden directors and executives of trade associations, industry, exporters and importers prevent them from devoting the time required to attend to the many questions inherent in shipping. A body representing shippers is indispensable for negotiating with the powerful shipping conferences and getting them to take the shippers' interests into account. And, the Code of Conduct for Liner Conferences establishes that shippers' organizations in each country are to represent importers and exporters as an integral part of the consultation machinery.

One of the benefits offered by shippers' councils is the advantage of having technical support and consultation available to bring pressure to bear, in representation of its interests, for the achievement of adequate conference practices and services in support of the country's foreign trade. A second benefit is that councils are convenient specialized organizations that can study and become familiar with the real world of transportation and propose solutions to the complex problems facing the sector. In this regard, it is worth noting that the success of certain

shippers' councils lies precisely in their having eliminated port surcharges that could no longer be justified, and having prevented undue increases in conference freight rates.

Practically all active shippers' councils have permanent secretariats with a full-time staff. Most are financed by members' contributions, government subsidies, or a mixed system, but some are supported by a compulsory tax or surcharge on shipments. Shippers' committees or councils have been in existence for many years in Australia (where they were born), Israel, Japan, New Zealand and South Africa, at the national level, and at both the national and regional levels in the Western European countries. There are councils in Austria, Belgium, Denmark, Finland, France, the Federal Republic of Germany, Greece, the Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom. The European system of mutual consultation is based on a resolution approved in 1963 by the European Conference of Ministers of Transport, together with a memorandum of understanding between the European Council of National Shipowners' Associations (CENSA) and European shippers' councils, prepared in the same year in compliance with the same resolution.

The Shippers' Council of Canada was created in 1966 and is composed of 19 commercial and industrial associations, including exporters', importers' and manufacturers' associations. In Canada, unlike Western Europe, consultations between shippers' councils and shipping conferences are direct rather than through national or regional shipowners' associations.

Since 1964, ECLAC, with financial support from the UNDP and in conformity with UNCTAD resolutions, has assisted in setting up shippers' councils in different countries of Latin America and the Caribbean. Unfortunately, ECLAC's initiative has not flourished as it should, due to failure within the countries to recognize the undoubted advantages these organizations can bring to users of international transport. In some countries, this failure has been attributed to an excessive number of trade associations, without realizing that a specialized agency with a trained, full-time staff is required to deal with problems that arise between shipowners and their clients, as well as with matters such as port improvements, Customs and administrative regulations, excessive paperwork that can overwhelm vessels and their cargoes, and many others related to the transport of foreign trade that concern shippers and shipping companies alike.

At present, the only active and independent shippers' councils in Latin America and the Caribbean are the Association of Maritime Transport Users of the Central American Isthmus (USUARIOS), created in 1969; the Colombian Council of Transport Users (CUTMA), created in Bogota in 1970; the Dominican Council of International Transport Users

(CODUTI); the Mexican Association of Transport Users (AMUTMAC), founded in 1974; and the Peruvian Council of International Transport Users (COPERUT). The Uruguayan Council of Transport Users was organized toward the end of 1984 with technical assistance from UNCTAD and CUTMA, and the Venezuelan Council of Transport Users has also recently begun to operate.

In 1979, an initiative of CUTMA brought about the creation of the Latin American Federation of International Transport Users' Councils (FELACUTI), whose president is located in the Dominican Republic and whose permanent secretariat is in Bogota. FELACUTI has reached significant agreements that promote adoption of the Code of Conduct for Liner Conferences and protect the interests of shippers.

The consultation system, of which shippers' councils are a fundamental part, thus benefits both sides: shippers, because negotiations are set up based on their requests and problems, and shipowners, because as the foreign trade of countries grows, shipping lines will see an increase in the volume of cargo to be carried. The system also offers advantages for national balances of payments, since freight costs paid to foreign vessels represent a major deficit item, and well-managed negotiations by shippers' councils with regard to freight rates, service conditions, promotional rates and the like can result in effective savings of foreign exchange.

11. Conference freight rates

The setting of rate schedules for a liner that carries many products to different ports is a complicated matter, since a multitude of factors go to make up the cost of water-borne transport. Some of these are indivisible, resulting in common costs that cannot be distributed directly among final production units, or joint costs that cannot be assigned to each product separately. Other factors have an impact on costs that is identifiable for each item in a shipment, such as those having to do with the nature of the cargo (value, type, packaging, stowage factor, susceptibility to damage or loss) and or its handling (loading and unloading, stowing and unstowing). Still other factors, while difficult to quantify and not directly related to the shipowner's costs, must nonetheless be taken into account: competition with other means of transport or with other ports of embarkation, the possibility of obtaining cargo for the return voyage, the regularity of shipments, the importance of the shipper, and the need or convenience of promoting transport of a given cargo. Therefore, when setting freight rates, conferences take into account not only those items whose costs can be distributed, but also the elasticity of demand. This intangible factor, also known as "what the traffic can bear", corresponds to the rate that can be paid for a product without hurting its chances on the market and without driving its shipper to use a different mode of transport.

According to a study submitted by the United States delegation to the Inter-American Maritime Conference held in Washington, D.C. in 1940, the following factors affect the composition of conference freight rates:²²

Fixed costs

- Administrative costs
- Financial costs
- Real estate charges
- Floating material charges

Voyage costs

- Vessel costs
- Crew costs
- Insurance, protection and indemnity (P&I)

Cargo costs

- Stowage factor (ratio weight/volume)
- Value of the commodity
- Characteristics of the commodity
- Packaging
- Special care during the voyage
- Ease of stowage
- Port handling costs
- Risk of robbery or theft
- Risk of damage or breakdown
- Cargo insurance
- Excess weight or length (for which a surcharge is added to the basic rate)

Traffic factors

- Port congestion or other special conditions (for which a surcharge is added to the basic rate)
- Port fees and charges
- Lighthouse and buoyage fees
- Abnormal features of the cargo moved
- Possibility of obtaining return cargo
- Distance to be travelled
- Competition with other means of transport.

As can be seen, distance is only one of many factors, and its influence is so relative for liners that conference rates are the same for Europe to all the ports on the Pacific Coast of South America between Buenaventura and Talcahuano, which are 2 574 miles apart. According to a study by ECLAC, the factors that are by far the most influential in setting conference rates in the foreign trade of Latin America are the ratio between weight and volume, which has a bearing on vessel capacity, and the value of the commodity, which determines "what the product can bear".²³

Liner freight rates are divided into three categories: product rates, class rates, and open rates. As the term indicates, rates for products or articles are established for the main items moved in the trade, and can be considered as individual rates. Class rates are those which group a number of products into a single category for which the same rate is charged. Open rates are those which the member lines, after obtaining authorization from the conference, set for certain products, keeping in mind the nature of the cargo or the overall circumstances of the traffic. Furthermore, there are many products —especially those shipped sporadically— for which no fixed freight rate has been set and to which the rate known as "cargo not otherwise specified" or simply "NOS" is applied. Latin American shippers have often complained about the practice of not setting specific rates but rather applying the NOS rate, which is always the highest and thus tends to be detrimental to the shipment of manufactured and semimanufactured products.

There are also frequent criticisms in this region about the high level of conference freight rates. However, it would be practically impossible to state that a rate is very high in absolute terms, or to what extent it exceeds the cost of the service. It can only be said that, in some traffics which have been studied, such as the inter-American trade, the conference rate structure is obsolete, the system of averaging freight rates by groups of ports in one or more countries is unfair, and true anarchy exists in the basis used for applying rates.²⁴ In fact, most of the rates in this traffic were established when the respective conferences were created at least half a century ago. Since then, they have merely been readjusted without changes in their structure to account for new transport conditions or port improvements such as those at Guayaquil, Ecuador, and San Martin (formerly Pisco), Peru, whose increased efficiency due to large investments in infrastructure has not been reflected in conference freight rates.

The system of averaging rates by country or groups of countries, based solely on their geographic location without consideration of their productivity, discriminates against the more efficient ports. This practice, which has been criticized repeatedly in different international forums, is unfair to countries that make large investments to improve their maritime terminals, and discourages spending for port works that are not reflected in rates.

When the freight rates charged by different conferences are compared, the anarchic basis on which they are applied becomes evident. Virtually the only two uniform aspects in the case of inter-American traffic are those involving the currency in which rates are paid (all are collected in United States dollars, while in traffic with Europe they are paid in German marks), and the fact that they are applied by product or lot and not by class or group of products as on other routes. However,

some conferences provide for the so-called dual rate system in which contract rates (generally 15% lower) are charged only to regular clients who undertake to make all their shipments over a given period (generally six months) in conference liners. In other traffics, the deferred rebate system is applied, although this is illegal in trade with the United States.

Shipping conditions are not equal on all routes, either. Thus, for cargo going to ports on the Atlantic Coast and the Gulf of Mexico and for intrazonal traffic, "liner terms" or "berth terms" apply, which include in the rate the costs of loading and unloading, and of stowing and unstowing, calculated from the end of the ship's hook in the port of embarkation to the end of the hook in the port of unloading. At ports of destination on the Pacific Coast of the United States, handling charges are levied, which appear as an additional amount in the rate.

Also, many rates are based on weight, others on size, and a considerable number by weight or size, whichever suits the shipowner better—or, as the traditional clause in conference tariffs states, "whichever produces the greater revenue." In turn, when rates are based on weight, the unit may be the metric ton (1 000 kg), short ton (2 000 lbs), long ton (2 240 lbs), 100 kg, or 100 lbs. When charges are based on size or volume, the rate may be set per 40 ft³, per cubic meter or per cubic foot. Rates are based on weight if the stowage factor (the density of the commodity) is less than 40 ft³/t. Last, an *ad valorem* rate ranging from 0.5% to 2.5% may be charged, depending on the traffic and the cargo, for items such as gold and silver in coin, bars or ingots, valuable furs, jewels, precious stones, watches, and precision instruments. In these cases, the shipper must expressly declare the value of the merchandise on the bill of lading.

In addition to fixed charges in conference rates, there are also temporary and permanent surcharges that the shipping company collects to compensate for conditions that differ from those taken into account when the rates were established and that are beyond the company's control. For example, surcharges are collected to compensate for fluctuations in the exchange rate of the dollar (currency adjustment factor), and for increases in fuel prices (bunker adjustment factor). Transitory surcharges based on port differentials compensate the company for unfavourable situations at a given port, such as deficient operating conditions (lack of berth space or handling equipment, labour difficulties, etc.), port congestion, and problems with draught, tides or access channels.

According to recent UNCTAD annual reports, the number of increases in currency and bunker adjustment factors has dropped considerably in the last few years. There were 251 increases in the currency factor in 1981 and 83 in 1982; in 1983 there were 33 increases and 77 decreases, with 33 and 74, respectively, in 1984. The bunker surcharge rose 229 times in 1981, 97 in 1982, only eight in 1983, and eight again in 1984, when five decreases also occurred.²⁵

Surcharges for port differentials are sometimes maintained long after the problem that gave rise to them has been corrected. These surcharges are not always sufficiently justified, as is also the case with rate increases. Trends in conference rates are always upward, but the increases are becoming fewer. The same UNCTAD annual reports show that 90 were announced in 1981, 55 in 1982, and only three in 1984.

It is true that most of the cost components of sea transport are beyond the control of shipping companies, especially those originating in ports, which have so much impact on total rates. However, it is very difficult for users to calculate or learn the composition of conference rates, due to the difficulty in establishing them and the closed attitude of shipping companies on this subject. This situation favours rate increases and the imposition of surcharges, to which users cannot offer well-founded objections since they have no notion of the costs. In an effort to improve this situation, ECLAC has for years been supporting use of a three-part tariff system that would increase the amount of information available to shippers and reduce the disadvantages of averaging rates by groups of ports, without changing the allocation of responsibilities established in the shipping terms of regular liners.

"The three-part tariff is a means of presenting the rates of a liner conference in such a way that the total charge under liner terms is divided up into three separately stated elements. The first of these elements refers to the costs of loading the cargo in the port of origin; the second corresponds to the line-haul movement between the ports of origin and destination; and the third refers to the costs in the port of destination."²⁶

A three-part tariff, which would express charges as the sum of the costs of loading at the port of embarkation, sailing between the ports, and unloading at the port of destination, would give users, shippers' councils and government authorities important background information that they do not now possess. It would also clarify the true significance of the costs incurred by vessels while in port. In short, a three-part rate system would make it possible to strengthen the negotiating capacity of shippers and avoid unjustified rises in rates or surcharges, since it would reveal the impact of increased costs in each of the stages involved in sea transport.

Under special circumstances, a conference liner may quote a free-in-and-out (FIO) rate to compete with a tramp offering more favourable conditions for the shipper. In this case, the shipper pays the shipping company only for the actual transport costs, and must pay loading and unloading charges separately in the respective ports. FIO terms are normal in the case of voyage charters for bulk products, but has complications for liner users, who do not normally know how much they will be charged for loading and unloading and so cannot calculate the total shipping cost in advance. FIO also supposes a change in the traditional

division of responsibilities between the shipper and the shipping company, as defined in liner terms.

12. Transport conditions

Goods carried by liners are accompanied by a bill of lading, the oldest-known commercial document, examples of which have been found dating from the 11th century. A bill of lading serves as:

- receipt for the cargo, given by the captain of the vessel to the shipper, that also indicates the condition of the cargo at the time it is loaded aboard;
- proof of the terms and conditions of transport agreed upon by both parties, and
- deed of title to the goods described therein, which is endorsable.

For more than half a century, the prevailing international legislation covering bills of lading was the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, signed in Brussels in 1924 and better known as the Hague Rules. This convention has been ratified or adopted by most seafaring countries. However, over a period of time many of its clauses became obsolete, so diplomatic conferences were held in 1967 and 1968 at the initiative of the International Maritime Committee (IMC) to seek its modification. This was accomplished in 1968 with the signing of the Brussels Protocol, generally known as the Hague-Visby Rules.

The major changes introduced by the Hague-Visby Rules deal with the monetary limit of liability of the carrier, which the Hague Rules had set at 100 pounds sterling per package or unit. Over the years, many problems had arisen due to the devaluation of the pound sterling and to the interpretation of what constituted a package or unit, especially in the case of unitized cargo. Therefore, the Hague-Visby Rules adopted a more stable fictitious currency, the gold franc or Poincaré, a monetary unit consisting of 65.5 mg of 0.900 fine gold. They set the limit of liability at the equivalent of 10 000 gold francs per package or unit, or 30 gold francs per kg net weight of goods lost or damaged, whichever was greater. They also established that, in the case of unitized cargo, a package or unit is defined as what the bill of lading lists as packed in a container, pallet or similar device. Although the 1968 Protocol has never entered into force because the necessary number of ratifications has not been obtained, the Hague-Visby Rules have been incorporated by some seafaring countries—mainly those of Scandinavia—into their respective national legislations.

Since neither of these Rules any longer represented a fair balance between the rights and obligations of the different parties, the IMC and different United Nations agencies undertook to revise them. The IMC and

the UNCTAD Working Party on International Shipping Regulations recommended in 1971 that the United Nations Commission on International Trade Law (UNCITRAL) consider the rules and practices related to bills of lading, with a view to revising or extending them, or if pertinent, replacing them with a new international agreement. UNCITRAL undertook this task and set up a working party that completed its task in May 1976 by submitting a draft Convention on the Carriage of Goods by Sea. The Convention, which was adopted at a United Nations conference held in Hamburg in March 1978 and is known as the Hamburg Rules, will enter into force one year and 30 days after the 20th instrument of ratification, acceptance, approval or adhesion has been deposited. Although it was approved by 67 countries, with no votes against and only four abstentions (Canada, Greece, Liberia and Switzerland), it still does not have the required number of ratifications to become effective.

The Hamburg Rules establish a reasonable balance between the interests of the different parties to a maritime transport contract. They safeguard the rights of shippers by fixing the liability of the carrier and the vessel with regard to losses, damage or delays, and by eliminating many antiquated causes waiving these liabilities. They establish that the carrier will be liable for loss of or damage to goods and for delays in delivery, unless the carrier can prove that it, its employees and agents took all reasonable precautions required to avoid such losses, damage or delays. They set the liability of the carrier at 835 Special Drawing Rights (SDR) per package or unit shipped or at 2.5 SDR per kg gross weight of the goods lost or damaged, whichever is greater. The liability of the carrier for delays in delivery is limited to an amount equal to 2.5 times the freight payable for the goods delayed, but not to exceed the total freight payable under the respective contract for the carriage of goods by sea.

Aside from transport under bills of lading, which represents the vast majority of liner cargoes, there are contracts of affreightment under which the owner of a cargo delivers a certain number of tons to a shipping company for transport between given ports within a definite time limit and under stipulated conditions. In this type of contract, the owner of the cargo or charterer pays the owner of the vessel or shipping company a rate per ton of cargo transported, without taking the vessel into account.

For the chartering of an entire vessel, three kinds of contracts are applicable: time charter party, voyage charter party, and bare-boat or demise charter.

Time charter: Under this type of contract, which may be for one year or less, for a number of years, or for the entire working life of the vessel, the shipping company is obliged to deliver the vessel to the agreed port in seaworthy condition and properly equipped for the use to which it will be put. The shipping company must also provide and pay for food,

supplies, wages and other costs associated with the captain, officers and crew, as well as insurance for the vessel and its equipment, stores (not including fuel), and all other vessel costs except those incumbent on the charterers under the contract. For their part, the charterers must pay for fuel, water for the boilers, port costs, wharfage, port dues and pilotage. In general, a time charter is paid in advance as an amount per dwt per month. The charter runs continuously, unless the vessel goes off-hire due to breakdowns or dry-dock repairs.

Voyage charter: Under this type of contract, the shipping company undertakes to place the vessel at the disposal of the charterers for the transport of a full or partial cargo between one or more ports of origin and one or more ports of destination, within a certain time limit, at the rate and under the conditions mutually agreed upon. The shipping company must pay for all operating expenses such as fuel costs, port costs, costs of loading and unloading, stowage and unstowage, and agency and freight commissions. The freight earned depends on the amount of cargo carried. The contract can be for one trip (voyage charter) or several consecutive trips (consecutive voyage charter), and payment may be per ton carried or a lump sum.

Bareboat or demise charter: Under this type of contract, which is generally for a number of years, the shipping company hands over complete control of the vessel to the charterers, who must manage it, operate it, insure it, repair it and furnish the crew as if it were their own. In other words, all operating costs are borne by the charterers except those related to the capital costs of the vessel—that is, depreciation, interest and profits—which are covered by the charter fee. There are three types of bareboat charters:

Simple bareboat, in which the charterers return the vessel at the end of the contract;

Bareboat with option to purchase, in which the charterers have the possibility of keeping the vessel and paying the owner a preestablished sum, and

Bareboat to purchase, in which, besides the rental covering interest, depreciation and profits, the charterers also pay off part of the value of the vessel during the charter period, and must pay the balance of the price to take legal possession of the ship. The charter fee is paid monthly in advance, either as a fixed sum or as an amount per dwt.

13. Marine insurance

The need for some form of insurance protection was recognized as early as approximately 400 B.C. when the city of Rhodes incorporated the institution of general average into its commercial legislation. The

Romans included the same idea in their own laws, from which it passed to the cities of Lombardy and the Hanseatic League. The discovery of America gave added impetus to international trade and thus increased demand for protection against transport losses. A number of schemes were tested, and what we know today as marine insurance evolved from the trials and errors of merchants and navigators who for centuries attempted to minimize the risk of monetary loss when carrying goods overseas. Nowadays, marine insurance is a major industry worth thousands of millions of dollars per year, which provides shippers with the possibility of minimizing the risk of loss due to perils of the sea, while charging them premiums that depend on the experience of the insurer with previous shipments of a similar nature.

Perils of the sea are those which originate in situations arising from navigation or which are attributable to these situations; they are classified as ordinary and special. Ordinary perils result from conditions of the sea as such, as well as from those that are extraneous or in addition to such conditions, while special perils result from wars and strikes. Perils of the sea include actions by the master to avert a common danger to ship and cargo, with any consequent losses prorated over all the cargo aboard (general average). They also include actions of the elements that destroy or cause a total loss of the insured items, or that only partially destroy a cargo as a consequence of shipwreck, stranding, fire, collision or contact with a foreign object. Extraneous or additional risks include particular average, weather, delinquent or negligent acts by third parties (robbery, theft, piracy, pilferage, nondelivery), risks arising from the conditions of transport (contact with other goods, sweat damage, hooks) and risks inherent in the nature of the goods (rusting, breakage, solidification, liquefaction, spills, filtration).

The purpose of marine insurance is to protect or compensate the owner of a cargo for losses that may occur while that cargo is in route from seller to purchaser. A marine insurance policy is simply an agreement or contract providing for compensation under certain terms and conditions. A policy is generally valid from the moment the goods leave the seller's premises until they are delivered to the purchaser's warehouses or the place of destination. Coverage is understood to be in effect from warehouse to warehouse, i.e., while the goods are in transit as well as while they are on board. This protection is usually provided by insurance companies, third parties who are professional risk-takers and who administer the system, set the premiums for the different types and classes of risks, guarantee payment of claims in the case of losses, make profits when the premiums collected are greater than losses plus costs, and cover the losses out of their own funds when premiums are insufficient.

In marine insurance, losses are total or partial. Total losses occur when the insured goods cease to exist for the insured party, even though their remnants may be of some monetary value. Partial losses are divided into general and particular averages. Particular average is a partial loss or damage to a vessel or a specific shipment of cargo not covered by the general average. The normal form of marine insurance only covers marine perils, i.e., damage considered to be caused by perils of the sea such as damage from saltwater or heavy weather, and certain damages caused by stranding, shipwreck, fire or collision. Some commodities are perishable by nature, while others are not susceptible to damage when in transit, so that it is not worthwhile paying an additional premium for them. These products are insured under a clause known as of "free of particular average", which means that the insurer will not pay compensation except for damage above a given percentage of their value, generally 7%.

As previously noted, general average is an ancient institution that has existed for more than 25 centuries, and is today incorporated into the legislations of almost all seafaring nations. It is based on the equitable idea that all who take part in a voyage—including the shipowner and the owners of the cargo—benefit when part of the goods aboard must be jettisoned to avoid greater loss, and all should thus contribute to paying for this voluntary sacrifice for the common good. For a general average to exist, three conditions must apply:²⁷

- danger is perceived to be imminent and unavoidable, and common to ship, cargo and crew;
- goods are jettisoned voluntarily, under the direction of the master, for the purpose of saving ship and cargo, and
- attempt to avoid the danger is successful.

In practice, it is the duty of the shipowner to ensure that adjustment for these losses is made. The matter is generally handed over to average adjusters, who must prorate the value of the vessel, the cargo and the freight to determine the corresponding contribution that must be collected from each of the parties involved to compensate those who have suffered losses.

There are cases in which groups that are closely linked by professional, social or other ties face similar risks. Under these circumstances, an insurance scheme does not require the services of an intermediary but can be managed by the interested parties themselves—at their own liability and risk—under what is called a mutual insurance plan. Shipowners exhibit such similarities, and so agreed as early as 1855 to provide mutual protection within the framework of what would eventually become protection and indemnity (P&I) clubs. These clubs are groups of shipping companies that have joined together for mutual insurance against accidents or eventualities

not covered by cargo insurance, hull insurance, on-the-job accident insurance or, in general, any risks not included in ordinary insurance policies. At present there are 27 P&I clubs, most with head offices in the United Kingdom and the rest in Bermuda, Europe and Japan. They support themselves with contributions proportional to the gross registered tonnage of their members' fleets, made as necessary to guarantee their solvency. Four of them include coverage for strikes, while two others are exclusively devoted to covering this risk. Other risks covered by P&I clubs include:

- repatriation of crew members;
- crew replacements;
- crew medical and hospitalization;
- loss of crew baggage;
- forced port call due to the illness of a crew member;
- loss or damage to cargo caused by navigational error;
- failure to deliver cargo;
- failure to deliver packages to Customs;
- loss or damage to another vessel due to collision (the portion not covered by marine insurance);
- damage to docks, bridges, lighthouses, piers, jetties, dikes, buoys, underwater cables;
- accidents suffered by stevedores or port workers for which the shipping company is liable;
- quarantine;
- fines due to errors in cargo manifests or for smuggling;
- fines for oil spills, and
- legal defence against claims.

The costs of hull and machinery insurance depend on the classification of a vessel by one of the classification societies. These societies are responsible for laying down shipbuilding standards, as well as for ensuring that these standards are complied with and that vessels are safely maintained. Vessels are thus subject every four or five years to a complete inspection of all their equipment (hull, machinery, propellers, rudders, etc.) in what is known as a special survey, conducted in addition to regular inspections and to those required each time a vessel changes owner.

The oldest and most important of the classification societies is Lloyd's Register of Shipping, founded in London in 1760 in Edward Lloyd's coffee house, which became a kind of shipping exchange. It should not be confused with Lloyd's Corporation (which had the same origin), a consortium whose members are individually liable for marine insurance and, recently, for other kinds of insurance as well. Lloyd's Register of Shipping publishes an annual *Register* that contains the characteristics of all vessels of over 100 grt, and the daily *List and*

Shipping Gazette with news about those ships. It has more than 1 000 surveyors in the main ports throughout the world.

The second society in age and importance is the American Bureau of Shipping, founded in New York in 1826, whose main objective is to certify the operational safety and seaworthiness of merchant ships and other naval structures. Although not a government agency, it is authorized by the governments of over 70 countries to determine freeboard, and by more than 30 to issue Certificates of Safety of Life at Sea (SOLAS). The ABS publishes a series of standards for shipbuilding and for classifying containers, and annually prints a *Record* containing basic information about more than 32 000 merchant vessels. It has over 600 surveyors in 93 countries.

Other institutions for classifying, inspecting and registering ships include the Bureau Veritas, also created in 1826 with head offices in Paris, which publishes *Registre Veritas* and *Repertoire General*; Germanischer Lloyd, which has its head office in Hamburg and was founded in 1867; Registro Italiano Navale; Nippon Kaijō Kyōkai, with head offices in Japan; Det Norske Veritas, with head offices in Norway; Polski Rejester Statków of Poland; and the USSR Register of Shipping of the Union of Soviet Socialist Republics. All are members of the International Association of Classification Societies.

In Latin America there are two national vessel classification societies, the Registro Brasileiro de Navios e Aeronaves, and the Mexican Sociedad de Registro y Clasificación.

14. Open Registry Flags

The subject of open registry flags or flags of convenience (FOCs) has been a controversial one since they first made their appearance on the world shipping scene shortly after World War I. As Dr. Aurelio González Climent explains in a series of articles published in the journal *Consultor*, the FOC originated in the need of a United States shipowner to win back the clients he lost on two trans-Atlantic luxury liners after passage of the Volstead Act, which established prohibition in the United States and on board ships flying its flag. Those ships were placed under the Panamanian flag in 1919, and since then Panama has continued to be one of the countries offering facilities for the registration of vessels belonging to foreign shipping companies. Liberia has now far outstripped Panama in tonnage, although not in number of vessels. Honduras, a member of the PANLIBHON group of countries, has ceased to offer FOC facilities, although it continues to list tonnage that apparently does not belong to national shipping companies. Singapore is another well-known FOC, the Bahamas, Bermuda, the Cayman Islands, Cyprus, St.

Vincent and the Grenadines, and Vanuatu are also members of the group. Antigua and Barbuda is a recent addition to the list, and as yet has no significant tonnage. The Isle of Man is a special case, in that ships registered there fly the flag of the United Kingdom but are free from British labour laws.²⁸

On 1 January 1987, there were 7 688 vessels of 217.0 million dwt (35.4% of the world's total) flying FOCs, 1 523 of which are registered in Liberia with 98.5 million dwt, and 3 960 in Panama with 67.4 million dwt. The remainder are registered under the flags of Cyprus (1 097 ships and 21.3 million dwt), the Bahamas (277 ships and 12.8 million dwt), Singapore (485 ships and 11.6 million dwt), Bermuda (85 ships and 2.2 million dwt), the Cayman Islands (157 ships and 1.8 million dwt), St. Vincent and the Grenadines (81 ships and 0.9 million dwt, and Vanuatu (20 ships and 0.5 million dwt).²⁹

FOCs have been strenuously opposed by the International Transport Workers' Federation, which groups together officers and crews from all over the world, and have been criticized in UNCTAD by the countries of the Group of 77 (with the logical exceptions of Cyprus, Liberia and Panama). In summary, these attacks allege that open registry vessels are generally old and poorly maintained, enjoy special tax benefits, and elude labour and social security legislation. On the other hand, defenders of the system argue that decaying vessels are not found only under FOCs, and that the labour syndicates try to impose conditions going beyond those agreed to in internationally-accepted conventions, particularly with regard to working conditions at sea.

UNCTAD has been concerned with this problem for a number of years. The Committee on Shipping has prepared various documents that provide useful background information on FOCs,³⁰ and has devoted several meetings to the subject. At the first, held in May and June 1981, the countries of the Group of 77 (with the exceptions noted) proposed their total abolition. However, after an intense debate, the conclusion was reached that it would be more logical to try to obtain their gradual and progressive transformation into a system of normal registration. It is noteworthy that the representatives of some Latin American countries such as Brazil, Chile, Cuba and Mexico, which have state-owned vessels under flags of convenience, voted against the open registry system, while the Latin American Shipowners' Association (ALAMAR), which brings together the main state-owned and private shipping companies in the region, came out in favour of it.

In the end, it was agreed to set up an intergovernmental preparatory group to propose a series of basic principles concerning the conditions under which vessels should be accepted in national registers, with a view to preparing documents for a conference of plenipotentiaries to consider adopting an international convention on the subject. The pre-

paratory group met a number of times, and the conference of plenipotentiaries was held in July 1984, but it did not reach an agreement on basic points such as genuine links between a vessel and the nation whose flag it flies, or the proportion of national crew members. It was thus decided that another conference was necessary, which took place in Geneva in January and February 1985. Since that meeting also ended without positive results, a new conference of plenipotentiaries was convened in July 1985, which made progress in various basic aspects. Again, however, a final decision was left pending.

In this regard, Prof. S.G. Sturmeý noted in a recent book that flags of convenience do not have a monopoly on aging, poorly-maintained ships, crewed with persons who are improperly trained and badly paid, nor do they stand out exclusively on account of the existence of unscrupulous shipowners.³¹ As Dr. Aurelio González Climent points out, Latin American shipowners who have registered vessels under FOCs "have simply done so out of convenience, because it has not been in their interest to do so under their own national flags and, in some cases, they have not been able to do so, which is the most striking aspect". He cites Argentina, Brazil, Chile, Cuba and Mexico among the most significant cases. In Argentina, where the incorporation of second-hand vessels is not permitted and where financial resources are insufficient to build new units, "the only way out for a national shipowner, in order to enjoy the benefits of cargo protection and reduced fuel prices, is to purchase his vessel on the international market, place it under a FOC, take it back himself on a bareboat charter, crew it with Argentineans, and thus continue expanding his fleet." The Brazilian state shipping company Docenave "has a subsidiary in Liberia that orders vessels from Brazilian shipyards as if they were for export, with all the consequent credit and financing advantages," without which it could not pay for construction. "In Chile, the wholesale putting into practice of the ideas of Milton Friedman posed a serious threat to the Chilean merchant marine, whose cargo reservation and coastal trade reservation were both sacrificed for the sake of an 'opening to the world market'. What other possibility was left to Chilean shipping companies but to transfer ships to FOCs? This was true to such an extent that the government itself facilitated these transfers." "In Cuba, its Panamanian flag vessels give it access to ports that would otherwise be closed to the Cuban flag." "In Mexico, under the national constitution, the crews of vessels flying the Mexican flag must be native born, possibly the only case of this type in Ibero-America. If the Mexican shipowner conformed to this limitation, his development as such would be thwarted. And since this is inadmissible, he resorts to FOCs."³²

Table 7 shows the most recent situation in Latin America, indicating the percentage of deadweight tonnage registered under FOCs as compared with national flags.

Table 7

**LATIN AMERICAN VESSELS UNDER OPEN-REGISTRY FLAGS
AS OF 1 JANUARY 1987^a**

(Millions of tons)

<i>Country</i>	<i>Units</i>	<i>GRT</i> (1 000)	<i>DWT</i> (1 000)	<i>Average</i> <i>age</i>	<i>% DWT</i> <i>compared</i> <i>to own flag</i>
Argentina	11	177	286	9.9	10.2
Brazil	11	593	1 165	5.2	11.5
Chile	8	132	161	10.9	20.5
Colombia	6	33	42	17.2	9.7
Costa Rica	2	5	8	15.5	727 ^b
Cuba	21	197	322	5.5	28.7
Ecuador	9	88	114	9.3	20.5
Mexico	35	526	899	12.8	47.9
Peru	11	174	266	9.6	33.0
Uruguay	2	16	25	19.0	12.6
Venezuela	3	11	19	16.6	1.4
Total	119	1 952	3 307	9.5	16.4

Source: Instituto de Estudios de la Marina Mercante Iberoamericana, (IEMMI), *La Marina Mercante Iberoamericana 1987*, Buenos Aires, 1987.

^a Vessels of 1 000 grt and over.

^b This percentage is misleading, since national-flag deadweight tonnage is almost negligible.

15. The new technologies³³

The traditional forms of manual handling and stowing of individually-packaged cargo present three major disadvantages:

Ships spend too much time in port because of the slowness of these operations.

Costs of manual handling, which constitute a significant portion of total operating costs, have increased considerably in many parts of the world.

Packages tend to be small and loose and so are easy prey to damage and pilferage, which are annoyances to the interested parties and increase the costs of insurance and surveillance.

To overcome these drawbacks, which occur mainly in ports, modern technology offers the possibility of greater speed and mechanization in transferring cargoes between land and sea modes of transport. Early applications were high-yield installations best suited for loading and unloading liquid and dry bulk goods, due to the homogeneity and fluidity of these cargoes. Because such installations solved the problem of long waits by vessels in port, thereby increasing time spent at sea, they made

feasible the building of large-tonnage ships whose higher costs were compensated by greatly increased productivity.

The handling of general cargo, which is neither homogeneous nor fluid, required a different solution. Modern technology's answer to this problem was unitization, which consists of giving different-sized packages the homogeneity necessary for them to be manipulated by high-performance equipment. The most common ways of unitizing cargo are palletization and containerization, both of which considerably increase the productivity of loading and unloading operations in comparison with traditional systems. However, constraints on containerizing certain cargoes and the large investments required for ships, containers, specialized terminals and handling equipment made it necessary to seek other kinds of unitization such as semitrailers and barges.

The semitrailer system involves trailers which are pulled by tractors onto ships fitted with ramps and/or elevators for this purpose (the Ro-Ro system), or loaded on railway platform cars ("piggyback") or barges ("fishyback"). The equipment required for these purposes is relatively low in cost except when there are wide variations in tides, which can be overcome by building a floating ramp with a gradient—generally of 12%—to suit the equipment used.

Freight barges are unpropelled vessels that are like large floating metal containers, with hatch openings almost as large as the entire upper surface to facilitate direct vertical stowing. Once loaded, they are sealed hermetically with hatch covers. They can carry any kind of dry cargo from bulk to containers, and some can carry liquids. They need no special equipment for loading and unloading, since cranes with a minimum capacity of three tons are sufficient to open and close the hatches and handle the cargo. Harbour tugs are used to move these barges between the dock and the mother ship. Shallow-draught push tugs can tow them by inland waterway to and from ports, in trains tied in two's.

Three sizes of barges are used, depending on the kinds of mother-ships that carry them: LASH, Seabee or BACAT. LASH barges weigh 87 t and have a capacity of 20 000 ft³ for 374 dwt, while Seabee barges weigh 171 t and have a 40 000 ft³ capacity for 847 dwt. The BACAT system has been put out of service in the traffic between the United Kingdom and Rotterdam, for which it was designed, due to labour problems.

Another means of unitization is the pallet, consisting of a platform on which a number of packages can be placed, forming a unit of cargo that is easy to transport, handle and stack, especially using fork lifts. Pallets are generally made of wood and have two separated platforms for support, or one platform with feet. Although pallets can be constructed for multiple use, their return is costly, so one-way pallets have been introduced which are discarded after one voyage.

The size of pallets varies according to the size of the cargoes to be palletized. There are approximately five different sizes, depending on whether they are for storage, embarkation or some other use. The only pallets that can be used in integrated transport systems are those measuring 100 x 120 cm, since they can be stowed in spaces measuring 2.0 m, 2.20 m or 2.40 m, the dimensions of freight containers and of most vehicles.

Although a new transport system must take into account both the type of cargo unitization and the type of vessel to be used, there is some confusion between the concepts of unitization and vessel in many discussions on the subject. In fact, a given unit-load device can often be carried on different types of vessels, making it possible to avoid a particular type that imposes drawbacks which are sometimes attributed to unitization itself. Ships for transporting unitized cargo are classified as container ships, Ro-Ro's, barge carriers and multipurpose vessels. Most permit the transport of different combinations of cargo, unitized or not, but some specialize in carrying only containers or barges.

Because the distinction between unit-load device and vessel is fundamental, it is necessary to consider the following eight combinations, each of which represents a different overall technology:

<i>Type of unit-load device</i>	<i>Type of Vessel</i>			
	<i>Container ship</i>	<i>Ro-Ro</i>	<i>Barge carrier</i>	<i>Multi- purpose</i>
Container	1	2	3	4
Semitrailer		5		5 ^a
Barge			6	
Pallet		7		8

Note that combination 5a is a variant of 5 (semitrailer/Ro-Ro), since some multipurpose vessels are fitted with ramps that permit them to load semitrailers. The greater convenience of one mode or another depends on the advantages offered by each in a specific situation. The most influential variables are:

- productivity and efficiency of the type of vessel and related equipment;
- port equipment and infrastructure required by a vessel;
- nature of the cargoes which make up the flow and balance in both directions;
- flow magnitude (in weight and volume) and routes;
- characteristics of existing port infrastructure;

- shipping conditions prevailing at the ports of call on a route;
- geographic location of the poles that generate international trade and their links to land infrastructure;
- condition and extent of railways and highways, and
- institutional structure (administrative, customs and health) as it pertains to the transfer and transit of unitized goods.

Economy in the use of a given type of vessel depends on the volume and characteristics of the traffic in which it is to be used; other important factors are the number of crew members, time in port and the distances to be sailed. It should be remembered that a ship can only earn income when it is under way, in other words, while it is transporting merchandise. The time it spends in port is equivalent to using it as a warehouse. Conventional liners lie in port for loading and unloading up to 70% of the time spent on a round trip. Unitization can reduce this time to 10% or 15%, thereby enormously increasing transport capacity.

Container ships are characterized by their high productivity, in comparison with convention freighters, with regard to the amount of cargo they can carry in a given period. As a consequence, containerization applied to a route translates into a considerable reduction in the number of vessels required. On the other hand, each container ship costs several times more than the traditional ships it replaces, not to mention the cost of the different sets —four or five, depending on the traffic— of containers it requires during its working life. The high cost of this new service and the need to reduce the number of vessels operated by each of the shipping companies serving a given route led to the formation of container-ship consortiums. Factors contributing to this formation were the drop in the frequency of calls by the vessels of each company and the appearance of major differences in the quality of service.

Ro-Ro's have very high productivity, being able to handle up to 1 200 ton per hour. Ro-Ro short-haul operations have been successful in various parts of the world for some time because they offer lower cargo handling costs and quicker return voyages than container ships, and nowadays they also operate over long distances with good results. They can also carry items whose weight or volume does not allow them to be containerized, such as transformers, helicopters, drilling equipment, etc. Another advantage is their flexibility, which allows their use in ports where special cranes are not available. They do not require special installations at terminals; in general, a free paved area for vehicles and cargo and a flat pier with no obstacles hampering the manoeuvres of motorized equipment are sufficient. Some Ro-Ro vessels are as large as 20 000 to 23 000 dwt, can carry up to 1 200 TEUs and travel at up to 22 knots. Smaller Ro-Ro ships of 5 300 dwt have a capacity of 212 TEUs and a speed of 20 knots.

The capacity of LASH vessels ranges from 73 to 89 barges of 374 metric tons each, in other words, from 29 000 to 30 000 dwt. Since the mother ship can load or unload four barges per hour, its productivity is approximately 1 500 tons per hour, but the productivity of the vessel itself should not be confused with the speed at which the contents of the barges is loaded and unloaded in port.

The multipurpose ship is versatile, capable of carrying both break-bulk and unitized cargo at the same time. Basically, this kind of vessel has a hull with a closed tween deck, a machine room located in the stern and more or less square holds. It carries simple loading and unloading machinery—a pair of booms or a crane for each hatch—and may or may not have tanks for liquid cargo. Its speed ranges from 14.5 to 16.5 knots. There are several types of multipurpose carriers such as the SD-14 and the SD-15, of 12 000 to 15 000 dwt with capacities of 600 000 to 700 000 cubic feet, respectively. The Japanese have two standardized models, one 21 600 dwt and another 25 000 dwt, with computerized engine control and a crew of 28 rather than the 40 or more required by earlier conventional vessels.

The consequences for ports of these new shipping technologies vary, but there are certain common elements. In the first place, as a result of the general trend towards using larger vessels—container, LASH, Ro-Ro and multipurpose ships are all much larger than traditional freighters—shipping companies reduce the number of calls on each route as much as possible, and use feeder services in transfer ports. Ports must also be deeper to accommodate vessels of greater draught, have sufficient open space for handling large amounts of unitized cargo in containers and semitrailers, and be provided with suitable mechanized equipment, operated and maintained by skilled personnel. It is necessary to plan ahead how best to adapt ports to the new technologies, when to construct special container terminals and, in particular, what adjustments to port, Customs, administrative and labour legislation, regulations, and rules are required to accommodate modern cargo-unitization systems and multimodal transport, which depend on rapid and timely service for optimal performance.

16. Cargo unitization

The container originated what has been called the greatest revolution in shipping since the introduction of steam. Although generally considered to be a modern invention, it has Biblical roots. The Old Testament speaks of the Hebrews transporting arms and food in war carts, which were really boxes loaded with cargo mounted on a kind of wagon. In fact, these boxes appear to have been a type of container. In modern times, during the Second World War the United States Army invented the conex

(container express), a standard box unit that was easy to handle and transport by truck or train, and that gave very good results on all fronts.

Curiously, it was not a shipping company that introduced the wide-spread use of containers. The idea of separating boxes from the chassis of a truck occurred to Malcolm P. McLean, an American involved in the highway transport business, who used a series of large semitrailers in the traffic between New York and Puerto Rico. In 1955, aided by the Port Authority of New York and New Jersey, he experimented successfully with the transport of these boxes on the decks of old tankers, and afterwards purchased vessels to create the shipping company Sea-Land Inc. In time, other American shipping companies such as the Matson Line followed his example. Nonetheless, the wide-spread introduction of containers was opposed by many shipping companies, especially those in Europe, on the grounds that they wasted a great deal of space. Their real objection, though, was that their conventional ships would become obsolete, so, in the words of a booklet published by a famous American consulting firm, they thought it "best not to innovate."³⁴

Despite early resistance, containerization has become an irreversible trend. It is growing at such a rate around the world that countries which do not adapt their transport systems to containerized cargoes run the risk of being relegated to the sidelines of international trade. A number of factors have contributed to the preeminence of this system, including the need to lower handling costs in the ports of the industrialized nations, the added cargo security it offers, and the considerable impact it has had on multimodal transport, with which it is sometimes confused. In this regard, it should be recalled that multimodal transport is an institutional concept, whereas cargo unitization using pallets, containers, Ro-Ro vessels or barges is a physical and material operation that consists of grouping a number of small or medium-sized packages into homogeneous units to facilitate their handling by mechanical means. Studies conducted by ECLAC, UNCTAD and other United Nations agencies in the course of preparing the draft Convention on Multimodal Transport concluded that multimodal transport constitutes a dynamic expression of the container, while cargo unitization is the backbone of multimodal transport. These studies show that unitization offers advantages for domestic economies, for multimodal ports and loading terminals, for transport companies, for shippers and consignees. Some of these advantages are discussed below.

For national economies: Domestic products can be carried abroad more economically and efficiently, increasing their ability to compete on world markets. Transportation generally improves and becomes more productive as a result of greater efficiency in cargo handling, quicker turn-around of vessels and land vehicles, lower costs of cargo-transfer

operations, and reductions in the loss, damage and theft of merchandise, all of which has a favourable impact on domestic economies.

For multimodal ports and terminals: Unitization makes equipment more productive by permitting faster loading and unloading. It increases operational capacity by allowing for continuous work without interruptions due to weather conditions. It reduces vessel congestion and waiting time. And it simplifies the identification of cargo, which can be located more quickly, inventoried more completely and cared for more safely.

For shipping and transport companies: The possibility of moving more tonnage in less time increases the carrying capacity of vehicles, which can make more trips in a given period, raising their earnings from freights and reducing their costs. Economies of scale are produced not only by handling, transporting and storing larger and more homogeneous cargo units, but also in Customs and port documentation and procedures. Instead of issuing 50 or 60 bills of lading or waybills to cover a load, only one document is required in the case of a container.

For shipper and consignee: Unitized cargo is less susceptible to damage, breakage, theft, and loss, and to deterioration caused by poor weather during loading and unloading. Containerization reduces risks and costs because merchandise is in transit for less time. Packing costs are reduced. Markets are increased since products can be delivered to more distant places and are able to compete better both in quality and price. Customs transactions are simplified and paperwork and procedures are curtailed. And since merchandise moves more rapidly, stocks may be maintained at lower levels, which also reduces storage costs, warehouse size and operations, and — because invested capital turns over quicker — financing requirements.

Nevertheless, the wholesale use of containers employing container ships and Ro-Ro's, which would be the way to optimize the unitized cargo system, requires large investments that can be especially burdensome for developing countries.

In ports: Container terminals must generally be deeper than ordinary ports, making costly dredging necessary. Large areas are needed to manoeuvre and store containers, which sometimes entails the purchase of land for port expansion. The equipment needed to handle containers efficiently (gantry cranes, gantry trucks, tractors, etc.) is extremely expensive, although there are large companies that rent this kind of equipment in Europe, Japan and the United States.

In transport facilities: Suitable infrastructure is required for the inland transport of containers — paved roads, adequate rail lines, bridges and tunnels — without which bottlenecks would occur and unitized cargo traffic would be limited to the former port-to-port system, thereby losing many of the advantages of multimodalism. Adequate trucks and railway

wagons must also be available. It is often advantageous to have interior cargo terminals for consolidation and deconsolidation, especially when single containers are used for goods destined for a number of different consignees ("less-than-container load", or LCL).

The most important factor for full entry into the multimodal transport era, in order to take maximum advantage of containerization, is the attitude of Customs and port authorities, tax officials, importers and exporters, and the shipping companies themselves towards the demands of these new technologies. The most delicate matter is perhaps Customs problems, since the lack of suitable legislation in some Latin American countries causes containers to be considered merchandise once they leave the depot area. Under such conditions, they are subject to Customs regulations and to payment of import duties or to temporary import procedures. In other cases, regulations require that containers be emptied so that their contents can be inspected and appraised at Customs, and then repacked, thereby obviating the advantages of the unitized system.

The attitude of seafarers' unions and shipping conferences must also change. So too must stevedores' demands for wages for handling unitized cargo that are equal to or even higher than for general cargo, which conspire against the use of the new technologies as much as the surcharges levied against containers as heavy items in the freight rates of some conferences.

The use of containers has been increasing constantly since the mid-1950s, when the International Organization for Standardization (ISO) approved standards for them. When the first specialized container ship —the *Gateway City*, of United States registry— was built in 1957, it could carry only 226 containers. Today, a number of third generation vessels can hold more than 4 000 TEUs and sail at 25 to 33 knots. By 1 November 1986, *Containerisation International* reported that there were 4 149 container-carrying vessels of all kinds in the world, with a total capacity of almost 2.6 million TEUs (MTEUs), of which 1 067 were fully-cellular container ships with a carrying capacity of 1.2 TEUs.³⁵

At the beginning of 1986, overall capacity of containers themselves had reached approximately 4.8 MTEUs, amounting to 3.6 million units of all kinds. Even more than in other parts of the shipping business, container ownership is concentrated in a very few countries, with 71.3% of all TEUs capacity in the hands of just five. The United States led with 43.2%, followed by the United Kingdom, 13.3%; Japan, 5.6%; Taiwan, 5%; and Italy, 4.2%. Latin America and the Caribbean as a whole owned only 64 thousand TEUs, or 1.4%.³⁶

Container traffic in terms of TEUs has grown at the following rates world-wide in recent years: 1978, 16.3%; 1979, 18.5%; 1980, 16.2%; 1981, 8.2%; 1982, 4.2%; 1983, 8.5%; 1984, 17.0%; and 1985, 6.0%. The highest rates were experienced in the Far East and Asia, followed by

Europe, North America and then Latin America and the Caribbean. While total container movements in 1956 amounted to a little over 20 MTEUs, in 1985 they were 55.8 MTEUs through 346 ports. Rotterdam was the most active of these, with over 2.6 MTEUs, followed by New York with 2.4 MTEUs, Hong Kong with 2.3 MTEUs, Kaohsiung (Taiwan) with 1.9 MTEUs, and Kobe with over 1.8 MTEUs. TEUs growth rates in Latin America and the Caribbean, while not high, have been steady: 1978, 2.1%; 1979, -0.1%; 1980, 1.8%; 1981, 0.4%; 1982, 0.4%; 1983, 0.4%; 1984, 3.0%; and 1985, 0.2%. In 1985, throughputs in the seven most active container ports of this region were 0.88 MTEUs in San Juan, 0.37 MTEUs in Santos, 0.22 MTEUs in Kingston, 0.14 MTEUs in Puerto Cortes, 0.11 MTEUs in Port of Spain, 0.094 MTEUs in Limon/Moin, and 0.090 MTEUs in Valparaíso.³⁷

17. Multimodal transport

Combined transport—the use of more than one means of transport in international traffic—has always existed. History tells us that the temple of Solomon was built in the 10th century B.C. with cedars from Lebanon, copper from Huelva and gold from Ophir, transported by the Phoenicians in their ships to Sidon, and carried from there by camelback to Jerusalem. Later, Venetian merchants following the route opened by Marco Polo used the same means of transport to trade between Venice, India and China via Mesopotamia. Without going back so far in time or distance, during the Colonial period, silver from the famous mine at Potosí travelled from the Peruvian highlands by mule train to Buenos Aires, where it was loaded onto Spanish galleons sailing for Seville. The "China Ship" carried its precious cargoes of silver and spices from the Orient to Acapulco, from whence they were taken across Mexico over what was the first intercontinental "land bridge," to continue the trip from Veracruz on to their final destination in Cadiz. All these operations were done in segmented fashion, with the carrier responsible for transporting the goods changing at each transfer point. This type of combined sea-land transport is still used on a large scale to move imports and exports between cities in the interior and ports.

The novelty of multimodal transport does not lie in its use of two or more modes of transportation, but rather in its treatment as a single operation, accompanied by a single shipping document and under a single direct liability during the entire journey. In other words, multimodal transport replaces the age-old system of moving goods "port to port" with an integral "door-to-door" service. Furthermore, it replaces the traditional segmentation of the journey into different stages, with an uninterrupted sequence of responsibility from the factory or production centre to the final consignee.

International multimodal transport is defined in the United Nations Convention on International Multimodal Transport of Goods as "the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country". It constitutes an institutional revolution affecting all institutions directly or indirectly linked to international transport, not only the government and private bodies that carry on foreign trade, but also the principles and elements of transport and even the rules and customs that govern it.

The coming of the container era and the consequent introduction of multimodal transport made it necessary to reconsider the rules under which such operations are carried out. Thus, between 1965 and 1971, some European intergovernmental and private international agencies prepared draft legislation, but it was soon recognized that only an international convention under the auspices of the United Nations would provide an adequate legal base. Therefore, the United Nations Economic Commission for Europe and the Inter-Governmental Maritime Consultative Organization (now the International Maritime Organization) submitted a joint draft convention on the combined transport of merchandise —known as the TCM Convention— to be discussed at the Conference on International Container Transport held in Geneva in November 1972. However, acting on a proposal made during the third UNCTAD in Santiago, Chile in May 1972, that conference agreed not to deal with the draft TCM but to continue studying it, "keeping in mind the situation and the special requirements of developing countries." For this purpose, an Intergovernmental Preparatory Group was set up composed of 68 members representing developing countries (the Group of 77), developed market-economy countries (Group B), and socialist countries (Group D).

The fact that the Preparatory Group held six sessions between October 1973 and March 1979 is evidence of the complexity of the subject and the difficulties encountered in finding solutions to harmonize the different interests at play. At last, however, a draft Convention on the International Intermodal Transport of Goods was submitted to a United Nations Conference of Plenipotentiaries that met in Geneva in November 1979 and May 1980, at which delegates from 80 countries approved it by consensus. The Convention will enter into force 12 months after it has been ratified by 30 countries, but by the end of 1985 only six nations had signed it, including Chile, Mexico and Venezuela.

The preamble to the United Nations Convention on the International Multimodal Transport of Goods states, among other principles, "that consultation should take place on terms and conditions of service, both before and after the introduction of any new technology in the

multimodal transport of goods, between the multimodal transport operator, shippers, shippers' organizations and appropriate national authorities; the freedom of shippers to choose between multimodal and segmented transport services; that the liability of the multimodal transport operator under this Convention should be based on the principle of presumed fault or negligence'.

The Convention has elements of public law (requirement to hold consultations, recognition of the right of governments to regulate the activities of multimodal transport operators) and of private law (liability of operators to users). Among its more important provisions, Article 4 on the regulation and control of multimodal transport makes clear that "This Convention shall not affect the right of each State to regulate and control at the national level multimodal and transport operations and multimodal transport operators, including the right to take measures relating to consultations, especially before the introduction of new technologies and services, between multimodal transport operators, shippers, shippers' organizations and appropriate national authorities on terms and conditions of service; licensing of multimodal transport operators; participation in transport; and all other steps in the national economic and commercial interest." Articles 5 to 13, which deal with documentation, establish that when a multimodal transport operator takes charge of goods, he shall issue a multimodal transport document which, at the option of the consignor, shall be in either negotiable or non-negotiable form. Article 14 states that the liability of operators covers the period from the time they take goods into their charge until the time they deliver those goods. Article 18 limits the liability of operators "to an amount not exceeding 920 units of account (i.e., special drawing rights) per package or other shipping unit or 2.75 units of account per kilogramme of gross weight of the goods lost or damaged, whichever is higher". The liability of operators for loss resulting from delay in delivery is limited to an amount equivalent to two and a half times the freight payable for the goods delayed. Last, Article 32 provides that contracting States shall authorize the use of Customs transit procedures for international multimodal transport, in accordance with the rules and principles contained in the annex to the Convention, subject to national law or regulations and intergovernmental agreements.

As has been mentioned, the institutional framework for international transport includes not only the government agencies concerned with foreign trade, but also the principles and elements of transport, the laws, regulations, provisions and even the practices that govern the interrelationships between institutions and private or corporate entities engaged directly or indirectly in this activity. Thus the following areas of the public sector are affected: the ministries responsible for transport, public works, finance or the public budget,

trade, animal and plant sanitation, ports, airports, and industrial activities, as well as national Customs and tax authorities, central banks, insurance regulators, etc. In the private sector, importers and exporters, carriers, Customs dispatchers, shipping agents, stevedores at ports and internal cargo terminals, and the different associations that bring together each of these business and labour groups are involved, together with insurance companies, commercial banks, and public, private and mixed export development agencies. The institutional aspects of greatest importance are the licensing of multimodal transport operators (MTOs) (also called multimodal transport companies —MTCs— at Latin American regional meetings) and the conditions they must comply with; the liability of MTOs and guarantees to ensure performance; and the Customs regulations authorizing the transit of merchandise and the guarantees these require. An MTO requires professional ability, operating capacity, financial solvency and good organization at the places of cargo origin and destination, at ports and at the other transfer points. The MTO cannot improvise but rather must organize and coordinate well in advance the chain of operations required to provide efficient, responsible service to shippers.

In the face of these many —and often conflicting— considerations, governments must determine who will be allowed to set up multimodal transport companies within their respective territories: whether only national companies will be allowed or also transnational companies that have agencies in the country; whether only carriers may do so or also operators who, without owning the means of transport, engage in offering multimodal services by contracting with third parties to carry goods in the different stages and to conduct cargo transfer operations. For example, Brazilian Law 6288 of 1975 establishes that international multimodal transport must be operated by Brazilian companies engaged in highway, railway, air or sea transport. Venezuela, in Decree 1628 of 1976, states that "legally constituted businesses in the transport industry may operate a combined transport system involving importing and exporting and transit by sea, air and land". On the other hand, there are a number of European international multimodal transport operators that do not own vessels, trains or trucks, and are involved exclusively in organizing and selling services, while others are created as subsidiaries of a consortium of shipping companies or have railway companies and one or more shipping companies as shareholders.

Large specialized multinationals can and do provide international multimodal transport service in developing countries, but there is always a danger of their forming monopolies or oligopolies that, through offering "service packages" for door-to-door transport, might impose their own operating rules without regard to a given country's legislation on foreign trade cargo reservations for national-flag vessels, exclusive coas-

tal trade reservations, insurance restrictions and the like. It is not easy to reach decisions on these matters, since each of the alternatives offers advantages and drawbacks and has limitations and complications. It should be remembered that international transport is basically a two-sided commercial activity, in which the situation and interests of both the country of origin and the country of destination of the cargo must be taken into consideration. Unilateral measures cannot be adopted by one party without affecting the other and the normal balance of trade and transport between the two.

18. International organizations and maritime transport

In spite of the vital importance of shipping for international trade and its overwhelming significance for developing countries, until 1964 there was no world forum to deal with the economic and commercial aspects of shipping activities. When the Inter-Governmental Maritime Consultative Organization was created in 1959, some developing countries had tried to have these subjects included within its sphere of action, but the maritime powers were able to restrict it to technical and related matters. The developing countries —and especially those of Latin America— thus viewed the establishment of the United Nations Conference on Trade and Development (UNCTAD) as the opportunity they had been seeking to create a body that would study shipping problems with a view to increasing their share in the transport of their own cargoes, and to reducing outlays of foreign currency for freight.

In Latin America, the Meeting of Government Experts on Trade Policy, which was held at the initiative of ECLAC in Brasilia in January 1964 to study problems of trade and development, agreed to recommend to the world conference that certain basic principles of shipping policy be included. In turn, the Special Commission for Latin American Coordination convoked by the Organization of American States to consider the Brasilia Agreements (Alta Gracia, Argentina, February-March 1964) supported the need to defend such principles at the conference in Geneva.

UNCTAD had its origin in Resolution 1707 (XVI) of 1962 of the United Nations General Assembly, which announced the United Nations Decade for Development, and Resolution 1710 (XVI), which requested the Secretary General to consult with the member States on the advisability of holding an international conference on trade problems. In August 1962, the Economic and Social Council of the United Nations (ECOSOC) decided to convoke such a conference, and set up a Preparatory Commission to study the agenda. The provisional agenda was approved by ECOSOC in Resolution 963 (XXXVI), which decided that the Conference would be held in Geneva from 23 March to 15 June 1964. The first

session of UNCTAD, attended by 120 member States of the United Nations, approved a resolution known as the Common Measure of Understanding on Shipping Questions (Annex A.IV.22 to the Final Act of the conference). These measures can be summed up as follows:

"1. The Liner Conference system is necessary in order to secure stable rates and regular services. However, in order that the system might function properly, it is necessary that there should be close co-operation between shippers and the conferences. As a first step, a well-organized consultation machinery should be established ... on a national and regional basis."

"2. The costs of inland transport and cargo handling costs in ports (including the cost of ships' time spent in port) in many cases represent a substantial percentage of total transportation costs of international shipments. There are possibilities of reducing the total cost of transportation by improving port facilities and in the establishment of new facilities. All countries should therefore give priority to improvement of port operation and of connected inland transport facilities. Greater efforts should be made in providing for the aforesaid purposes and to this end international financing and aid and technical assistance (should) be made available on favourable terms and conditions.

"3. It was considered that the development of merchant marines in the developing countries, as well as their participation in Liner Conferences as full members on equitable terms, is to be welcomed. The question of development of merchant marines by developing countries should be decided by such countries on the basis of sound economic criteria."

Although this recommendation, as the product of negotiations, did not reflect all the aspirations of developing countries, it was a major step forward in the relations between the great powers and the Third World, which for the first time discussed problems of this kind in a world forum. Also approved was a recommendation proposing the creation of a consultative and advisory intergovernmental body on shipping and freight rates under the auspices of UNCTAD.

Prior to the second UNCTAD, a number of intergovernmental meetings at the ministerial level were held to examine the questions to be dealt with at the Conference. At regional meetings, the African Declaration of Algiers, the Bangkok Declaration and the Tequendama Charter were approved. The full Group of 77, which at that time included 88 developing countries in Africa, Asia and Latin America and now has over 100, met in Algiers in October 1967.

The second session of UNCTAD was convened in New Delhi, India, from 1 February to 29 March 1968, with 121 member States in attendance. With respect to shipping, resolutions were adopted regarding the

establishment of a system of consultations, conference rates and practices, shipping conditions, the Maritime Transport Commission, and the promotion of ports and merchant marines in developing countries.

The third UNCTAD was held in Santiago, Chile, from 13 April to 21 May 1972, with 131 member States participating. Once again it was preceded by a series of intergovernmental meetings at the ministerial level at which the Addis Ababa Plan of Action, the Bangkok Declaration and the Lima Consensus were approved by countries from the Group of 77. UNCTAD III proceeded to unanimously approve resolutions on the development of ports, the combined international transport of goods, freights, promotion of merchant marines and economic cooperation in the sphere of maritime transport. It also approved, with 74 votes in favour, 19 against and two abstentions, a resolution presented by the Group of 77 on a draft code of conduct for liner conferences. This controversial resolution did not specify a code of conduct, but decided that such a code that would be "universally acceptable, in which the special needs and problems of developing countries are fully taken into account" was urgently needed.

The fourth UNCTAD, held in Nairobi, Kenya in May 1976, adopted a resolution on special measures for the least-developed Third World countries encouraging shipping companies and the members of shipping conferences to set freight rates favourable to the growth of their exports, and recommending that industrialized countries and international financing institutions consider the possibility of assisting them to build and expand their national merchant marines.

At the fifth UNCTAD, held in Manila in May 1979, the first resolution strongly recommended the speedy application of the Code of Conduct for Liner Conferences and the establishment and strengthening of shippers' organizations. The second resolution recommended fair shares of traffic for lines belonging to countries shipping bulk cargoes. The third encouraged the governments of member States to grant credits to developing countries for the purchase of new and second-hand vessels, and to offer them technical assistance for shipping.

The sixth UNCTAD was held in Belgrade, Yugoslavia in June 1983. Unlike previous meetings, there was no special commission to deal with shipping problems. The single resolution on the subject that was approved requested the General Secretary of the United Nations to prepare new studies on the financing of vessels and ports for developing countries, on the structure of the shipping industry "to identify the causes and effects of protectionist policies and monopolistic practices", on the urgent need to complete work on the conditions for registering vessels, and on the level of freight rates and the structure of conference tariffs. The resolution also called for completion of pending negotiations on shipping legislation and mortgages, and for preparation of a plan of

action for cooperation among developing countries in the fields of shipping, ports and multimodal transport.

In its 20 years of existence, UNCTAD has worked successfully to promote and strengthen the interests of Third World countries in the fields of shipping and multimodal transport, especially through its Maritime Transport Committee and its specialized working parties. Among its many achievements are the adoption of basic instruments to coordinate and regulate international transport, such as the Code of Conduct for Liner Conferences signed in Geneva in 1974, the Convention on the Carriage of Goods by Sea (Hamburg Rules) approved in Hamburg in 1978, and the United Nations Convention on the International Multimodal Transport of Goods concluded in Geneva in 1980.

Another specialized agency of the United Nations that works exclusively with shipping matters is the International Maritime Organization (IMO), with headquarters in London. It was created under a resolution of the United Nations Maritime Conference held in Geneva in 1948, but did not begin to function until January 1959, upon fulfillment of the stipulation that its constitutive convention be accepted by 21 countries, seven of which must have at least one million gross registered tons each. IMO offers a forum in which member governments and other interested organizations can exchange information and attempt to solve technical and legal problems related to shipping safety and the prevention of pollution of the sea by ships. As a result of its deliberations, the organization can approve and recommend regulations to be adopted by governments, and can convoke international conferences to adopt conventions. As of March 1987, 130 States were members of IMO.

Some of the conventions for which IMO is responsible and has authority are the Convention on Facilitation of International Maritime Traffic, 1965 (FAL); the International Convention on Load Lines, 1966 (LL); the International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE); the International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC); the Special Trade Passenger Ships Agreement, 1971 (STP); the Convention on International Regulations for Preventing Collisions at Sea, 1972 (COLREG); the International Convention for Safe Containers, 1972 (CSC); the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 (MARPOL 73/78); the International Convention for the Safety of Life at Sea, 1974 (SOLAS); and the constitutive convention of the International Maritime Satellite Organization (INMARSAT). Aside from these conventions, IMO has adopted over the years a number of codes and recommendations such as the Code of Safe Practice for Bulk Cargo, 1965; the International Maritime Code on Dangerous Goods, 1965; and the International Signalling Code, 1965. The organization also has a technical cooperation program to assist governments in applying its conven-

tions and recommendations effectively, as well as an active group of advisers and consultants.

Another means by which the United Nations provides valuable cooperation in the study and resolution of maritime transport problems is through the activities of its various agencies that do not specialize in transport. Of particular significance in this respect is the work done by the regional economic commissions such as the Economic Commission for Latin America and the Caribbean (ECLAC). In the region for which it is responsible, ECLAC has been more concerned with shipping matters than any other international organization, conducting studies and cooperating with governments in specific fields in the sector through its Transport and Communications Division. From 1962 to 1981, with a few lapses, ECLAC collaborated with the Organization of American States in carrying out a joint Transport Program that prepared a world-wide *Port Code* (most recently published as E/CEPAL/G.1222, 14 October 1982), which served as the basis for the United Nations Code for Ports and Other Locations (Economic Commission of Europe, Working Party on Facilitation of International Trade Procedures, Recommendation No. 16, September 1980). The OAS-ECLAC Transport Program also prepared a *Manual of Shipping Documentation for the Ports of Latin America* (E/CEPAL/1060, 29 April 1979; /Add.1, April 1980; and /Add.2, 17 September 1981), which contains the documentary requirements for the reception and dispatch of vessels, and the consular formalities they must comply with, in all the ports of Latin America and the Caribbean. Furthermore, ECLAC has a joint program with IMO and maintains permanent liaison with UNCTAD. It has cooperated with the United Nations Statistical Office in an effort to establish the Uniform System of Maritime Transport Statistics in Latin America. Every two months since 1975, it has published the *Boletín FAL*, which contains information on activities related to the facilitation of trade and transport in Latin America and the Caribbean.

In 1983, ECLAC and IMO together were instrumental in setting up the Operative Network for Regional Cooperation among Maritime Authorities (ROCRAM), composed of the 11 member countries of LAIA plus Panama and dedicated to promoting an exchange of information and views about technical aspects of international maritime transport. The Network seeks to promote the application of the various IMO conventions, and improve the effectiveness of training programs offered by merchant marine academies and other maritime training centers. It also fosters the application of the Uniform System of Maritime Transport Statistics, the preparation of its member countries to cope with oil pollution at sea, the simplification of shipping documentation, the facilitation of sea-borne trade, and the application of resolutions adopted by regional meetings of governmental maritime authorities.

In 1986, ECLAC participated in the formation of yet another regional organization, the Latin American Maritime Transport Commission (COLTRAM), a permanent technical forum of the Latin American Economic System (SELA). The previous year, the Latin American Council, SELA's legislative body, had approved Resolution 28 adopting the Latin American Maritime Transport Strategy, one of whose provisions was the establishment of COLTRAM "to periodically carry out a complete examination of maritime transport and related activities in Latin America and the Caribbean, identify the problems affecting it—in particular those related to freight rates, technology, adequacy of service, legislation and restrictive practices—and foment actions required for their solution." To comply with this mandate, COLTRAM has undertaken an ambitious work programme, among whose objectives are to act as a consultative and coordinating body for the adoption of common positions and strategies on maritime transport-related topics in the face of third countries, groups of countries, and before regional or subregional organizations and business groups associated with the sector.

A number of private international agencies are also active in maritime transport. Among them are the International Shipping Federation and the International Chamber of Shipping (ICS), both with headquarters in London. The ICS, which was founded in 1921, brings together national shipping associations from 30 countries—including Brazil, Colombia and Mexico—with a view to promoting the interests of its members in the field of shipping in general, including navigation, navigational safety, maritime law, insurance, documentation and control of marine pollution. The Baltic and International Maritime Council (BIMCO), with headquarters in Copenhagen, Denmark, is a group of shipping companies and brokers from 99 countries that studies the problems of maritime transport from the viewpoint of shipping activities, and does valuable work on documentation, especially in preparing model charter contracts which can be applied universally. The International Association of Ports and Harbours (IAPH), which was created in 1955 and has its headquarters in Tokyo, brings together over 210 regular members and approximately 150 associate members from 147 countries on the five continents—including Argentina, Brazil, Colombia, Ecuador, El Salvador, Haiti, Honduras, Mexico, Panama, Peru, Surinam, Trinidad and Tobago and Venezuela; it is concerned with increasing the efficiency of ports by generating and disseminating information for port authorities in the areas of organization, administration and operations, and with promoting international relations and understanding in maritime trade.

The main state-owned and private shipping companies of the 11 LAIA countries belong to the Association of Latin American Ship Owners (ALAMAR), with headquarters in Montevideo. ALAMAR was created in 1963 at the initiative of the National Shipping Association of Chile,

which suggested the idea at the second conference of the contracting parties to the Montevideo Agreement, held in Mexico City in December 1962. ALAMAR was very active in studying the LAFTA Water Transport Convention, cooperates with ECLAC and LAIA, and publishes a biweekly *Boletín Informativo* with news about the shipping business.

The Central American Shipping Association (ACAMAR), which has its headquarters in Managua, Nicaragua, brings together the major shipping companies in that area. The Central American Maritime Transport Commission (COCATRAM), also with headquarters in Managua, has as members the port authorities of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

In the labour sector, the most important world-wide organization, with recognition by United Nations agencies such as UNCTAD, IMO and the ILO, is the International Transport Workers' Federation (ITF), headquartered in London. Its membership is composed of officers and crew from the merchant marines and airlines in all countries, together with port and marine workers. The ITF seeks to protect the rights of its members and their minimum wages, and has been outstanding in its struggle against open-registry flags and in favour of compliance with the IMO conventions on human life at sea and the ILO labour conventions.

19. Shipping policy³⁸

From the remote times of Crete's maritime supremacy, all sea-faring nations have assisted their merchant marines in one way or another as basic instruments for their development and economic independence. Although the protective and promotional measures taken by all the different countries throughout history cannot be examined here, it should be recalled that, in Christian times, England was one of the first to pass laws protecting its merchant marine. As early as 1025, King Athelstan awarded titles of nobility to those of his subjects who went to sea three times with a vessel and cargo belonging to them. At the end of the 14th century, Richard II prohibited the transport of cargo to or from the country in vessels not belonging to subjects of the King, while in 1651 Oliver Cromwell promulgated the famous Navigation Act, which remained in force for two centuries and gave Great Britain supremacy over world sea trade. The Navigation Act established that all products from British colonies had to be carried in British vessels, that all products coming from the Continent had to be carried in British ships or in ships of the country of origin, and that coastal shipping was reserved for the national flag.

This measure of the Lord Protector of the Commonwealth had a similar although less well-known precedent in the Spanish-speaking

world. In 1397, Henry the Sorrowful, King of Castile and Leon, granted the port city of Bilbao the privilege that all its imports should be made in ships of the country. Later, following the discovery and conquest of America, the Indies Act conceded exclusive rights for commerce with Spain to Spanish vessels, as well as giving them significant economic advantages.

Other maritime powers over the centuries have adopted similar provisions to protect and stimulate their commercial fleets. For example, in the Middle Ages the powerful Republic of Venice, whose motto was "life is not necessary but sailing is", allowed sea trade to become a privilege of the patrician class and excluded foreign ships from its main traffic. It further ordered that vessels belonging to its citizens could only be sold to other Venetians.

France, like Portugal and the Netherlands, reserved colonial traffic for vessels flying its flag. The famous minister Colbert gave bonuses for building and sailing French ships and declared that nobility was compatible with involvement in the merchant marine, as a means of promoting maritime trade.

For its part, the United States has protected its flag on the sea since its birth as a nation. The first act passed by the first Congress of the Union was the Shipbuilding and Shipping Act of April 1789, aimed at promoting shipbuilding and the merchant marine.

At present, more than 48 nations offer their commercial fleets and shipping industries various developmental and protective measures, according to a recent report of the United States Maritime Administration dealing only with the principal maritime powers. A detailed analysis of the report shows that 21 countries grant building subsidies to shipowners, 10 grant operating subsidies, 10 permit accelerated depreciation of the value of vessels, 29 offer different tax benefits, and 29 offer low-interest loans for the construction or purchase of vessels. What is more important, 34 nations have recourse to cargo preferences for national vessels, especially with regard to goods purchased or sold by government agencies and goods that receive government tax exemptions. There are also 34 nations that reserve coastal shipping for their own vessels. It is evident that large powers and developing countries alike coincide in these shipping support incentives, each to the extent permitted by its economic capacity or by its will to do so. Among the countries that offer shipbuilding subsidies are Argentina, Brazil, Canada, France, the Federal Republic of Germany, India, Japan, the Netherlands, Pakistan, Peru, Portugal, Spain, Taiwan, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, among others. Those that grant operating subsidies include Argentina, Australia, India, Italy, Japan, Korea, Mexico, Peru, Spain, and the United States. In some cases, this assistance is considerable: in the

United States, for example, in the fiscal year 1982, shipbuilding subsidies—which may represent up to 50% of the cost in the nation's shipyards—reached US\$349 million, while operating subsidies of US\$401 were paid to its shipping companies to place them on an equal footing with foreign competitors in traffics considered strategic.³⁹

As a consequence of problems that arose during World War II caused by the withdrawal of the foreign ships that carried their imports, the Latin American countries became aware that it was indispensable for them to have their own merchant marines to free them from dependency on foreign hulls, to ensure the transport of their foreign trade, and to strengthen their balances of payment. "Until World War II, these republics restricted their activity to passing resolutions in the occasional international conferences advocating better services, which were provided up to that time almost exclusively by foreign shipping companies, and criticizing rate levels, which were and are fixed entirely by shipping conferences".⁴⁰

In effect, both at the first International Conference of American States (Washington D.C., 1889) and at most of the following ones, the Latin American member countries called for reductions in shipping costs and improvements in services. Recommendations along the same lines were adopted at the Inter-American Maritime Conference (Washington D.C., 1940), at the Third Consultation Meeting of Ministers of Foreign Affairs (1942) and at the Chapultepec Conference (Mexico City, 1945). Later, a ministerial meeting of the Inter-American Economic and Social Council (Rio de Janeiro, 1954) declared that one policy of the American republics is that their domestic merchant marines, made up of vessels flying their flags, should carry a substantial share of their foreign trade. A similar declaration was agreed to by these countries during the Inter-American Economic Conference convoked by the Organization of American States (Buenos Aires, 1957), as well as in the Punta del Este Charter (August 1961), which created the Alliance for Progress.

For its part, the Latin American Free Trade Association (LAFTA, until 1980; now the Latin American Integration Association, LAIA) has been concerned since the moment it was created about this factor that is basic for the trade and economic integration of the region. The Group of Experts on Transport, composed of senior government and private-sector officials, met for the first time in August 1960, only four months after the Provisional Committee of Montevideo was set up, and then again in July 1962. Its recommendations formed the basis for the studies of the Working Party on Transport of the Second Conference of the Contracting Parties to the Montevideo Agreement (Mexico City, August-December 1962), thanks to which approval was given to Resolution 44 (II) recommending that an agreement be signed on the main principles of sea and river transport policy in the region, and Resolution 45 (II)

agreeing to sponsor the creation of a Latin American Shipping Association. The first meeting of LAFTA Foreign Ministers (Montevideo, November 1966) established the objectives of ocean, river and lake transport policy, recommended the speedy constitution of a Transport and Communications Council, and asked the Permanent Executive Committee to submit a draft agreement on water-borne transport as soon as possible.

The Transport and Communications Council, at its own first meeting (May 1966), unanimously approved the Water Transport Convention, which was signed at LAFTA headquarters on 30 September 1966 by plenipotentiaries of the nine countries that were then contracting parties to the Montevideo Agreement: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay (Bolivia and Venezuela became LAFTA members at a later date). The Convention was ratified by Mexico (May 1967), Chile (October 1968), Ecuador (July 1969), Paraguay (November 1970) and Colombia (July 1973). Since these signatures constituted a quorum, the Convention should have entered into force, but it still has not done so due to difficulties that arose during the debate over its regulations, which were approved by six delegations in 1968.

Basically, the LAFTA Water Transport Convention guarantees the right of cargo reserve in trade between the contracting parties, in favour of their own national vessels. This right was to be implemented multilaterally and gradually, with respect to both time and volume, to the extent permitted by the transport capacity of their respective merchant marines. Excluded from these provisions are the bulk transport of petroleum and its derivatives, and transport to and from noncontracting countries. Noncontracting countries that perform regular and traditional services can offer supplementary services in traffic between the contracting parties, under conditions established in the regulations. The Convention also makes provision for promoting the creation of freight conferences, to which it assigns important functions. It contains specific norms on the conditions under which a vessel can be considered national and on the circumstances under which a foreign vessel chartered by a national shipping company can be given the same treatment. Last, the Convention contains assurances on the equality of treatment for all national vessels belonging to the contracting parties; on the improvement of port conditions; on the improvement of port and transit facilities required by landlocked countries to carry out their ocean, river and lake transport; and on the promotion of harmonious development in the countries of the region.

Many aspects of the LAFTA Water Transport Convention continue to be valid. However, the principle of cargo distribution which it contains has been superseded by the 40-40-20 system sponsored by the Code of Conduct for Liner Conferences.

As has been mentioned, since the end of World War II, most Latin American countries—including all LAIA members—have taken steps to strengthen their merchant marines in order to promote their participation in the transport of their own foreign trade. Table 8 lists the main incentives offered by the LAIA countries for the development of their merchant marines.

As can be seen, all 11 nations reserve all their coastal shipping and a substantial part of their import cargoes for their national flag vessels although, in the case of Chile, competition from foreign vessels is permitted in both traffics if rates are lower than those charged by Chilean ships. Three countries use consular intervention to control the shipping of their imports in national vessels. Eight countries have established mandatory reservation of transport of the goods of state and semistate agencies, and two do so preferentially. Six countries make it mandatory to transport goods imported with government exemptions or credits in national ships, while two make this preferential.

Nine bilateral agreements are in effect for the equitable sharing of exchange cargoes: Argentina with Brazil, Chile, Peru and Uruguay, and Brazil with Chile, Ecuador, Mexico, Peru and Uruguay. All the countries give their shipping companies the right to enter into cargo-distribution agreements with foreign companies. All except Paraguay authorize their shipping companies to charter foreign vessels (considered as national for the purpose of cargo reservation) to complement their own fleets, and give them tax benefits of different kinds. Five nations give tax exemptions to shippers using national vessels. Four maintain merchant marine funds that offer subsidies or loans for the purchase and repair of vessels, while these four plus a fifth give credits for these purposes.

When the results of the shipping policies followed by LAIA countries are examined, it can be seen that, broadly speaking, fleets have grown in direct proportion to the development incentives offered in each case. One interesting expression of such policy is the potential of government-owned shipping companies, 10 of the largest of which, with 64% of the floating tonnage, are state owned. Moreover, the two most important shipping companies in Argentina, the only company in Bolivia, the three main ones in Brazil, and the company with the largest tonnage in each of the remaining countries (except for Colombia) belong to the state.

It is timely to recall that, in maritime powers in general and in Denmark, the Federal Republic of Germany, Japan, Sweden, the United Kingdom and the United States in particular, the fleets of private shipping companies are the most important. Moreover, the United Kingdom, which in the past has nationalized its railways, ports, collective transport and even its coal mines, has never nationalized the shipping business. It is thus pertinent to ask why the phenomenon of state

Table 8

**LATIN AMERICAN INTEGRATION ASSOCIATION:
MAIN INCENTIVES FOR THE DEVELOPMENT
OF NATIONAL MERCHANT MARINES**

<i>Measures in force</i>	<i>AR</i>	<i>BO</i>	<i>BR</i>	<i>CL</i>	<i>CO</i>	<i>EC</i>	<i>MX</i>	<i>PY</i>	<i>PE</i>	<i>UY</i>	<i>VE</i>
Coastwise reserve (100%)	X	X	X	X ^a	X	X	X	X	X	X	X
Reserve of a percentage of commercial import and export cargo (generally 50%)	X	X	X	X	X	X	X	X	X	X	X
Consular intervention to apply reserves						X		X			X
Transport in national ships of cargo of state and semistate agencies:											
Compulsory	X		X		X	X				X	X
Preferential							X		X		
Bilateral conventions (50-50%) for exchange cargo	X		X	X		X	X		X	X	
Permission to enter into cargo distribution contracts with foreign shipping companies	X	X	X	X	X	X	X	X	X	X	X
Permission to charter foreign vessels and consider them as national for purposes of cargo reserve	X	X	X	X	X	X	X		X	X	X
Tax benefits for national shipping companies	X	X	X	X	X	X	X		X	X	X
Tax benefits for the users of national ships	X		X		X		X			X	
National merchant marine fund for subsidies and loans	X		X						X	X	
Credits for construction, purchase and repair of ships	X		X				X		X	X	

Sources: Sepúlveda Whittle Tomás, *Hacia una política naviera para la ALALC*, Catholic University of Valparaíso, Chile, 1965. Instituto de Estudios de la Marina Mercante Iberoamericana, (IEMMI), *La Marina Mercante Iberoamericana*, Buenos Aires, 1965 to 1980. Asociación Latinoamericana de Armadores (ALAMAR), *Recopilación de legislación sobre transporte por agua en los países de la ALALC*, Latin American Free Trade Association, Montevideo, 1980; *Add.II* and *Add.III*, Latin American Integration Association, Montevideo, 1981 and 1982, respectively.

^aWith limitations which permit competition from foreign vessels.

ownership of merchant fleets in Latin America is so important. On the one hand, it is clear that the governments have recognized an overwhelming need to possess their own vessels to carry part of their foreign trade, especially petroleum, to free themselves from dependency on foreign vessels and to reduce the foreign currency drain to pay for transport. On the other, however, there may not have been sufficient incentive to invest in a business as risky as shipping, which requires so much capital, when investments can be made more safely in other financial activities offering higher profits and greater personal control.

20. The situation in Latin America

a) *Development of merchant marines*

As noted in the previous chapter, it was only after World War II that Latin American countries became concerned with strengthening their merchant marines. Unfortunately, comparative statistics on the development of the fleets in the region only go back as far 1965, when the yearbooks of the Institute for Latin American Merchant Marine Studies (IEMMI) began to be published. As shown in table 9, growth since then has been continuous but uneven: from a high of 11.8% during 1974 to a low of 0.15% during 1986, with an average of 6.1% per year and a total of 269.5% over the period 1965-1987. However, the percentage of government ownership has been fairly uniform, with tonnages ranging from a low of 55% of grt at the beginning of 1972 to a high of 67% of grt at the beginning of 1982. The average age of the ships has dropped from 15.4 to 9.4 years over the period 1965-1982, but has since begun to increase gradually.

No breakdown of this growth is available for all the countries of Latin America, but for LAIA members, individual statistics appear in table 10. It can be seen that behaviour has been very unequal. The average growth in deadweight tonnage was 358%, but while Ecuador experienced 1 871%, Uruguay had only 97%. There was a noticeable improvement in the age of vessels, with the average weighted according to grt dropping from 17.0 to 10.8 years. In this aspect as in tonnage, Brazil was outstanding, with an improvement from 19.0 to 9.0 years, followed by Argentina, with a drop from 20.0 to 13.3 years. On the other hand, Paraguay's fleet has aged from 1.0 to 17.2 years. The age of Colombian and Ecuadorian vessels has also risen, although to a lesser extent, due to the purchase of second-hand vessels.

Table 11 shows the national merchant marines of Latin America as of 1 January 1987, classified by government-owned and private sectors, in order of the importance of their tonnage. Brazil has half of the region's overall capacity (50.2% of grt), followed at a large distance by Argentina with 13.9% and Mexico with 9.2%; among them, these three countries

own 73.3% of the total grt. When Venezuela with 6.6% and Cuba with 5.6% are included, these five countries make up more than 85% of the total grt. In the state-owned sector, the same five countries head the list, although Cuba climbs from fifth to third place, but in the privately-owned sector, Chile and Colombia displace Venezuela and Cuba. The average age of vessels owned by state companies, 9.7 years, is significantly lower than that of private sector vessels, 12.8 years.

Table 9

**LATIN AMERICA: GROWTH OF THE MERCHANT MARINE
1 JANUARY 1965-1987^a**

Year	Number of vessels	Tonnage			Average age (years)
		GRT (1 000)	Percentage change	Percentage state owned	
1965	655	3 468		62	15.4
1966	649	3 485	0.49	62	15.5
1967	670	3 644	4.56	62	15.1
1968	669	3 696	1.43	66	14.7
1969	674	3 959	7.12	59	13.9
1970	685	4 198	6.04	56	13.3
1971	702	4 573	8.93	56	12.9
1972	718	4 833	5.69	55	12.2
1973	757	5 245	8.52	58	12.1
1974	776	5 634	7.42	60	11.7
1975	784	6 301	11.84	61	11.1
1976	829	6 791	7.78	62	11.0
1977	868	7 373	8.57	66	11.1
1978	923	8 187	11.04	66	10.6
1979	894	8 987	9.77	65	10.1
1980	904	9 697	7.90	65	9.8
1981	918	10 536	8.65	66	9.6
1982	965	11 583	9.94	67	9.4
1983	988	11 889	2.64	64	9.5
1984	991	12 070	1.52	63	9.8
1985	1 004	12 501	3.57	62	10.2
1986	995	12 796	2.36	63	10.4
1987	995	12 815	0.15	64	10.8
1965-1987					
Total change:			269.52		
Avg. yearly:			6.12		

Source: Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI), *La Marina Mercante Iberoamericana* Buenos Aires, 1980 and 1987.

^aVessels of 1 000 grt and over.

Table 10

**EVOLUTION OF MERCHANT MARINES IN THE LAIA
COUNTRIES AS OF 1 JANUARY 1961, 1970 AND 1987^a**

<i>Country</i>	<i>Year</i>	<i>Units</i>	<i>GRT (1 000)</i>	<i>DWT (1 000)</i>	<i>Percentage chg. DWT 1961-87</i>	<i>Age (years)</i>
Argentina	1961	151	664	1 274		20.0
	1970	185	1 090	1 425		19.5
	1987	146	1 806	2 814	121	13.3
Bolivia	1961	-	-	-		-
	1970	-	-	-		-
	1987	1	10	16		10.0
Brazil	1961	227	1 006	1 433		19.0
	1970	201	1 212	1 748		11.8
	1987	356	6 145	10 152	608	9.0
Chile	1961	48	224	299		14.0
	1970	43	273	273		12.3
	1987	38	490	784	162	15.0
Colombia	1961	24	92	134		9.0
	1970	33	199	269		9.6
	1987	35	340	434	224	12.8
Ecuador	1961	8	24	34		10.0
	1970	8	40	46		8.5
	1987	51	392	670	1 871	13.1
Mexico	1961	30	160	232		22.0
	1970	37	309	477		6.5
	1987	89	1 215	1 878	709	11.3
Paraguay	1961	7	8	7		1.0
	1970	15	17	15		8.1
	1987	22	34	39	457	17.2
Peru	1961	26	102	155		14.0
	1970	38	284	395		11.9
	1987	48	512	805	419	13.7
Uruguay	1961	15	67	101		17.0
	1970	15	110	172		17.3
	1987	13	122	199	97	16.1
Venezuela	1961	42	318	485		10.0
	1970	38	327	472		13.4
	1987	78	904	1 333	175	9.6
Total LAIA	1961	578	2 965	4 154		17.0
	1970	613	3 864	5 384		13.9
	1987	877	11 970	19 008		10.8
LAIA percentage change 1961-1987:		52	304	358		-36

Sources: For 1961 and 1970, Tomás Sepúlveda Whittle, *Evolución del transporte marítimo en la ALALC*, (ALALC/SEC/PA/36), Latin American Free Trade Association, Montevideo, June 1973; for 1987, Instituto de Estudios de la Marina Mercante Iberoamericana, (IEMMI), *La Marina Mercante Iberoamericana 1987*, Buenos Aires, 1987.

^aVessels of 1 000 grt and over.

Table 11
DISTRIBUTION OF LATIN AMERICAN NATIONAL MERCHANT
MARINES BY OWNERSHIP, AS OF 1 JANUARY 1987

Country	Units	GRT (1 000)	DWT		Avg. age (years)
			1 000	Percentage region	
State Sector					
1 Brazil	147	4 433	7 673	38.0	9.2
2 Argentina	70	806	1 202	5.9	9.3
3 Cuba	104	797	1 124	5.6	11.6
4 Mexico	60	776	1 144	5.7	11.7
5 Venezuela	34	692	1 051	5.2	7.7
6 Peru	27	296	473	2.3	11.3
7 Ecuador	18	227	357	1.8	8.3
8 Chile	5	96	180	0.9	12.3
9 Uruguay	3	74	137	0.7	12.4
10 Paraguay	16	24	25	0.1	16.8
11 Colombia	5	11	11	0.1	16.6
12 Bolivia	1	10	16	0.1	10.0
13 Nicaragua	2	9	14	0.1	23.5
14 Costa Rica	2	3	1	0	28.5
Total	494	8 252	13 406	66.3	9.7
Private sector					
1 Brazil	209	1 711	2 479	12.3	8.5
2 Argentina	76	1 001	1 611	8.0	16.4
3 Mexico	29	440	734	3.6	10.6
4 Chile	33	394	604	3.0	15.7
5 Colombia	30	328	428	2.1	12.7
6 Peru	21	217	333	1.6	16.9
7 Venezuela	44	212	282	1.4	16.2
8 Ecuador	33	165	199	1.0	19.7
9 Uruguay	10	49	61	0.3	21.8
10 Dominican Republic	7	30	49	0.2	18.2
11 Paraguay	6	10	14	0.1	18.0
12 Guatemala	3	8	12	0.1	18.4
Total	501	4 568	6 802	33.7	12.8
Combined total					
1 Brazil	356	6 145	10 152	50.2	9.0
2 Argentina	146	1 806	2 814	13.9	13.3
3 Mexico	89	1 215	1 878	9.3	11.3
4 Venezuela	78	904	1 333	6.6	9.6
5 Cuba	104	797	1 124	5.6	11.6
6 Peru	48	512	805	4.0	13.7
7 Chile	38	490	784	3.9	15.0
8 Ecuador	51	391	555	2.7	13.1
9 Colombia	35	340	434	2.1	12.8
10 Uruguay	13	122	199	1.0	16.1
11 Paraguay	22	34	39	0.2	17.2
12 Dominican Republic	7	30	49	0.2	18.2
13 Guatemala	1	10	16	0.1	10.0
14 Nicaragua	2	9	14	0.1	23.5
15 Bolivia	3	8	12	0.1	18.4
16 Costa Rica	2	3	1	0	28.5
Total	995	12 815	20 208	100.0	10.8

Source: Instituto de Estudios de la Marina Mercante Iberoamericana, (IEMMI) *La Marina Mercante Iberoamericana 1987*, Buenos Aires, 1987.

Note: Tonnages may not add due to rounding.

Table 12 lists the Latin America's most important shipping lines. Of the first ten, all but TMM of Mexico are state owned. Of the 30 with over 100 thousand grt, 16 belong to the state and have an aggregate of over 7.7 million grt, 60% of the region's total. It is worth noting that not only the two main shipping companies of Argentina, the four most important in Brazil and the three largest of Venezuela belong to the state, but that this sector also owns the only two Cuban shipping companies and the largest companies in Chile, Ecuador, Mexico and Peru.

Table 13 refers to the traffic serviced by the Latin American merchant marine and to the types of vessels engaged in it as of 1 January 1987. More than half of the units afloat and three-quarters of deadweight tonnage are engaged in deep-sea services, over one-third of the vessels and nearly one-quarter of the tonnage serve coastal traffic, while the remainder serve river and lake traffic. Bulk carriers prevail in the deep-sea services with 18.5% of total grt, followed by very large and ultra-large crude carriers (VLCCs and ULCCs) with 10.1%, multipurpose vessels with 9.4%, ore/bulk carriers with 9.1% and general cargo ships with 8.3%; all remaining types have small to insignificant percentages. In coastal traffic, the highest percentage corresponds to oil tankers with 9.6%, followed by product tankers with 5.3%. Despite extensive navigable river systems in several countries of the region, vessels engaged in river and lake service, even unpropelled barges represent only 1.0% of total tonnage. In all three services, the number of different types of vessels is striking, which indicates that the Latin American merchant marine has become more specialized and can serve the region's needs better.

b) *National shipping companies' share of traffic*

The lack of reliable, up-to-date shipping statistics is a serious problem that the United Nations has been attempting to solve for a number of years by sponsoring use of the Uniform System of Maritime Transport Statistics. This scheme, which is based on link data for vessels and cargo, would provide information on imports and exports by country, port of origin, port of destination, flag of registry, etc. ECLAC has been very active in promoting the application of the Uniform System in Latin America and the Caribbean.

For the present, however, the only Latin American countries that publish official shipping statistics are Brazil, Chile, Ecuador and Uruguay. This does not mean that the other countries in the region do not keep such statistics, only that these are reserved for use by the government agencies producing them and are not made public. It is thus very difficult to obtain figures on this subject and the tables prepared for this chapter are a first attempt, which has been made possible thanks to the courtesy of the State and private agencies involved, and where it has been

impossible to obtain data, they have been estimated based on available background material.

Table 14 gives the share of the national shipping companies of the LAIA countries in their foreign trade in 1983, both in their own vessels

Table 12

**PRINCIPAL SHIPPING COMPANIES OF LATIN AMERICA
AS OF 1 JANUARY 1987**

<i>Shipping company (country and type of ownership)</i>	<i>National flag</i>		<i>Other flags</i>		<i>Totals</i>	
	<i>No. of units</i>	<i>GRT (1 000)</i>	<i>No. of units</i>	<i>GRT (1 000)</i>	<i>No. of units</i>	<i>GRT (1 000)</i>
1 PETROBRAS (Brazil, S)	65	2 832	-	-	65	2 832
2 DOCENAVE (Brazil, S)	15	611	6	554	21	1 165
3 Mambisa (Cuba, S)	62	594	20	196	82	790
4 PEMEX (Mexico, S)	41	641	-	-	41	641
5 Lloyd Brasileiro (Brazil, S)	43	583	-	-	43	583
6 ELMA (Argentina, S)	40	413	-	-	40	413
7 TMM (Mexico, P)	7	193	13	158	20	351
8 Yac. Petro. Fis. (Argentina, S)	23	341	-	-	23	341
9 Fundo Mar. Merc. (Brazil, S)	10	317	-	-	10	317
10 LAGOVEN (Venezuela, S)	10	293	-	-	10	293
11 Grancolombiana (Colombia, P)	19	243	1	12	20	255
12 Naviera Alianza (Brazil, P)	14	238	-	-	14	238
13 Frota Ocean. Bras. (Brazil, P)	13	218	-	-	13	218
14 CSAV (Chile, P)	8	114	4	79	12	193
15 CAVN (Venezuela, S)	15	192	-	-	15	192
16 CBTG (Brazil, P)	8	185	-	-	8	185
17 NETUMAR (Brazil, P)	14	183	-	-	14	183
18 MARAVEN (Venezuela, S)	7	167	-	-	7	167
19 NAPACA (Ecuador, P)	9	75	7	81	16	156
20 CPV (Peru, S)	11	135	2	21	13	156
21 Alianza Naviera (Argentina, P)	5	137	-	-	5	137
22 E.N. Caribe (Cuba, S)	34	133	1	1	35	134
23 FLOPEC (Ecuador, S)	7	132	-	-	7	132
24 Ultraoceánica (Argentina, P)	5	118	1	11	6	129
25 EMPREMAR (Chile, S)	5	96	2	26	7	122
26 G.M. Tolteca (Mexico, P)	2	36	4	85	6	121
27 Maruba (Argentina, P)	4	62	2	49	6	111
28 Naviera Santa (Peru, P)	3	30	2	78	5	108
29 ESSO (Argentina, P)	10	107	-	-	10	107
30 MARIFRAN (Argentina, P)	2	70	1	36	3	106

Source: Instituto de Estudios de la Marina Mercante Iberoamericana, (IEMMI), *La Marina Mercante Iberoamericana 1987*, Buenos Aires, 1987.

Note: S = state-owned shipping company; P = private shipping company.

Table 13
LATIN AMERICAN MERCHANT MARINES BY TRAFFIC AND
TYPE OF VESSEL AS OF 1 JANUARY 1987

Type of ship	No. of units	GRT (1 000)	DWT (1 000)	Average age (years)	Percentage total GRT
<i>Deep-sea vessels</i>					
Bulk carrier	96	2 368	3 967	10.1	18.5
Very large crude carrier	13	1 298	2 568	11.4	10.1
Multipurpose carrier	112	1 201	1 808	8.0	9.4
Ore/oil & ore/bulk/oil	15	1 172	2 155	9.5	9.1
General cargo carrier	136	1 064	1 406	16.0	8.3
Oil tanker	16	481	811	6.2	3.8
Rapid cargo carrier	36	407	489	14.6	3.2
Conbulker	20	395	589	55.5	3.1
Refrigerated	43	282	320	13.3	2.2
Gas tanker	9	194	238	8.0	1.5
Product tanker	11	158	246	9.5	1.2
Container carrier	14	153	195	8.3	1.2
Chemical tanker	14	152	238	7.2	1.2
Roll-on/Roll-off	5	48	30	6.6	0.4
Unpropelled barge	1	13	24	15.0	0.1
Car carrier	1	10	11	11.0	0.1
Livestock carrier	1	2	3	28.0	0
Total deep-sea vessels	543	9 399	15 098	10.4	73.3
<i>Coastal vessels</i>					
Oil tanker	56	1 230	2 031	10.7	9.6
Product tanker	71	679	1 041	13.4	5.3
General cargo carrier	70	294	412	13.9	2.3
Bulk carrier	25	223	329	11.6	1.7
Conbulker	6	109	164	2.8	0.9
Chemical tanker	11	96	156	7.8	0.7
Gas tanker	16	93	94	12.4	0.7
Ferry	25	78	17	15.2	0.6
Ore/oil & ore/bulk/oil	2	75	129	18.0	0.6
Unpropelled barge	21	63	99	16.5	0.5
Roll-on/Roll-off	11	54	45	6.3	0.4
Multipurpose cargo	5	50	74	9.8	0.4
Cement carrier	9	30	40	12.4	0.2
Container carrier	2	25	31	4.3	0.2
Salt carrier	5	11	11	16.6	0.1
Passenger ship	4	8	2	18.6	0.1
Total coastal vessels	339	3 119	4 676	11.7	24.3
<i>River and lake vessels</i>					
Unpropelled barge	28	132	232	6.9	1.0
Product tanker	28	49	75	26.7	0.4
Bulk carrier	17	47	73	15.2	0.4
Passenger ship	11	25	7	17.2	0.2
General cargo carrier	17	23	27	22.7	0.2
Ferry	8	15	9	23.6	0.1
Oil tanker	1	3	5	22.0	0
Livestock carrier	1	1	1	27.0	0
Roll-on/Roll-off	1	1	2	8.0	0
Gas tanker	1	1	1	17.0	0
Total river and lake vessels	113	297	433	14.6	2.3
Total all vessels	995	12 815	20 208	10.8	100.0

Source: Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI), *La Marina Mercante Iberoamericana, 1987*, Buenos Aires, 1987.

Note: Tonnages may not add due to rounding.

Table 14
LAIA: SHARE OF NATIONAL SHIPPING COMPANIES
IN VOLUMES OF THEIR FOREIGN TRADE, 1985

(Thousands of tons)

Country and trade	National companies				Foreign companies		Total volume
	Volume in own-flag ships	Percentage	Volume in chartered ships	Percentage	Volume	Percentage	
Argentina							
Exports	3 956	10			33 768	90	37 724
Imports	3 396	63			1 979	37	5 375
Total	7 352	17			35 747	83	43 099
Bolivia ^a							
Exports	25	11			200	89	225
Imports	50	8			575	92	625
Total	75	9			775	91	850
Brazil							
Exports	10 354	7	16 323	12	115 275	81	141 952
Imports	22 747	47	22 301	46	3 447	7	48 495
Total	33 101	17	38 624	20	118 722	63	190 447
Chile							
Exports	1 475	12			11 158	88	12 633
Imports	1 086	24			3 394	76	4 480
Total	2 561	15			14 552	85	17 113
Colombia							
Exports	900 ^a	14 ^a			5 620 ^a	86 ^a	6 520
Imports	1 100 ^a	18 ^a			4 860 ^a	82 ^a	5 960
Total	2 000 ^a	16 ^a			10 480 ^a	84 ^a	12 480
Ecuador							
Exports	423	17			2 035	83	2 458
Imports	451	24			1 405	76	1 856
Total	874	20			3 440	80	4 314
Mexico							
Exports	7 000 ^a	8 ^a			82 157 ^a	92 ^a	89 157
Imports	1 300 ^a	12 ^a			9 603 ^a	88 ^a	10 903
Total	8 300 ^a	8 ^a			91 760 ^a	92 ^a	100 060
Paraguay							
Exports	120 ^a	11 ^a			1 000 ^a	89 ^a	1 120
Imports	60 ^a	11 ^a			500 ^a	89 ^a	560
Total	180 ^a	11 ^a			1 500 ^a	89 ^a	1 680

Table 14 (concluded)

Country and trade	National companies				Foreign companies		Total volume
	Volume in own-flag ships	Percentage	Volume in chartered ships	Percentage	Volume	Percentage	
Peru							
Exports	2 020	19	2 200	21	6 166	60	10 386
Imports	1 380	46	100	3	1 557	51	3 037
Total	3 400	25	2 300	17	7 723	58	13 423
Uruguay							
Exports	100 ^a	11 ^a			800 ^a	89 ^a	900
Imports	200 ^a	29 ^a			500 ^a	71 ^a	700
Total	300 ^a	19 ^a			1 300 ^a	81 ^a	1 600
Venezuela							
Exports	34 000 ^a	40 ^a			50 779 ^a	60 ^a	84 779
Imports	5 000 ^a	39 ^a			7 683 ^a	61 ^a	12 683
Total	39 000 ^a	40 ^a			58 462 ^a	60 ^a	97 462
LAIA							
Exports	60 373	16	18 523	5	308 958	79	387 854
Imports	36 770	39	22 401	24	35 503	37	94 674
Total	97 143	20	40 924	9	344 461	71	482 528

Sources: Argentina: Unpublished figures courtesy of the Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI), Buenos Aires; Brazil: Superintendência Nacional da Marinha Mercante (SUNAMAM), *Anuario* 1985; Rio de Janeiro, 1986; Chile: Dirección General del Territorio Marítimo y de Marina Mercante, *Anuario estadístico* 1985, Valparaíso, 1985; Colombia: Departamento Administrativo Nacional de Estadística (DANE), *Anuario de Comercio Exterior*, 1985 Bogotá, 1986; Ecuador: Dirección General de la Marina Mercante y del Litoral, *Sistema portuario ecuatoriano - Boletín estadístico* 1985, Guayaquil, 1985; Mexico: Unpublished figures courtesy of the Dirección General de la Marina Mercante, (totals only); Paraguay: Unpublished figures courtesy of the Centro de Promoción de las Exportaciones (CEPEX) (totals only); Peru: Unpublished figures courtesy of the Dirección General de Transporte Acuático, Ministerio de Transporte y Comunicaciones, Lima, 1987; Uruguay: Administración Nacional de Puertos, *Estadísticas* 1985, Montevideo, 1986; Venezuela: Ministerio de Energía y Minas, *Petróleo y otros datos estadísticos (PODE)* 1985, Caracas, 1986 (totals only).

^a Author's estimates.

and in foreign vessels chartered and operated by national shipping companies and considered as flying the national flag for purposes of cargo reservation under current legislation. In that year, national shipping companies carried 16% of their exports and 33% of their imports in own-flag vessels —19% of total foreign trade— and 4% and 34%, respectively, in chartered vessels, an additional 11% of foreign trade.

Meanwhile, foreign companies' shares were 80% of exports and 33% of imports, amounting to 70% of the region's overall external trade. Although the share of traffic carried by national companies was not high, it represented a significant increase over 1962, when their share was estimated at 6% of the total, with 2% (4.2 million t) of the exports and 31% (11.3 million t) of imports. In 1970, these figures were 10.1% of the total, with 3.9% (11.9 million t) of exports and 41.8% (24.7 million t) of imports, in both own-flag and chartered ships.

The considerable growth in the volume of the region's trade is worth noting. Imports rose from 59 million t to 90 million t (53%) between 1970 and 1983. Although total exports only grew from 304 to 341 million t (12%), oil exports from Venezuela experienced a marked decline, from 185 million t in 1970 to 60 million t in 1983. If Venezuelan oil is subtracted, the region's other exports also increased greatly.

An analysis of table 14 shows that the shares of national fleets in overseas traffic reflect the shipping policies followed by the respective countries. Thus Brazil, whose protection of shipping interests has already been mentioned, has been able to transport 94% of its imports and 21% of its exports in Brazilian ships, although chartered vessels carried 57% and 11% of these totals, respectively. Venezuela, thanks to the nationalization of its oil industry (including the oil fleet) is carrying approximately 38% of its exports and 39% of its imports in own-flag vessels.

Stress should be placed on the large imbalance in foreign trade in Latin America. Exports in 1983 reached 341.5 million t, whereas imports were barely 90.2 million t. This phenomenon, which is also reflected in the traffic served by national companies, has a great impact on the efficiency of shipping services and works against their cost effectiveness.

c) *Share of national shipping companies in freight rates*

Table 15, which supplements table 14, shows the share of the LAIA member countries' national shipping companies in freights from foreign trade during 1983. The figures have been obtained from transport-related sources such as ministries of transport or directorates of merchant marine and not from central banks because, as UNCTAD also observes, figures on balances of payments are incomplete. Earnings obtained by national vessels from carrying a nation's imports and from chartering ships to nationals of the same country are not reflected in balance of payment accounts, since they do not represent any input of foreign exchange. This was also demonstrated at a seminar held by ECLAC in 1984, which compared the sums paid to foreign shipping companies in 1981 —US\$9 061 million— with the negative balance of payments for these same LAIA countries —US\$2 661 million dollars— a very important difference.

Table 15

**LAIA: SHARE OF NATIONAL SHIPPING COMPANIES IN
FREIGHTS FROM THEIR FOREIGN TRADE, 1985**

(Millions of US dollars)

Country and trade	National companies				Foreign companies		Total freights
	Freights own-flag ships	Per-cent-age	Freights chartered ships	Per-cent-age	Freights	Per-cent-age	
Argentina							
Exports	239	12			1 711	88	1 950
Imports	107	51			103	49	210
Total	346	16			1 814	84	2 160
Bolivia ^a							
Exports	3	12			22	88	25
Imports	10	14			60	86	70
Total	13	14			82	86	95
Brazil							
Exports	310	11	372	14	2 065	75	2 747
Imports	465	45	379	36	199	19	1 043
Total	775	20	751	20	2 264	60	3 790
Chile							
Exports	35	9			370	91	405
Imports	44	22			158	78	202
Total	79	13			528	87	607
Colombia ^a							
Exports	200	34			380	66	580
Imports	260	50			260	50	520
Total	460	42			640	58	1 100
Ecuador							
Exports	24	16	38	24	95	60	157
Imports	35	21	44	27	87	52	166
Total	59	18	82	25	182	57	323
Mexico							
Exports	40 ^a	12			300 ^a	88	340
Imports	45 ^a	22			164 ^a	78	209
Total	85 ^a	15			464	85	549
Paraguay ^a							
Exports	8	10			72	90	80
Imports	15	15			85	85	100
Total	23	13			157	87	180

Table 15 (concluded)

Country and trade	National companies				Foreign companies		Total freights
	Freights own-flag ships	Per-cent-age	Freights chartered ships	Per-cent-age	Freights	Per-cent-age	
Peru							
Exports	65	25	42	16	153	59	260
Imports	25	20	4	3	96	77	125
Total	90	23	46	12	249	65	385
Uruguay ^a							
Exports	13	15			73	85	86
Imports	52	40			78	60	130
Total	65	30			151	70	216
Venezuela ^a							
Exports	340	34			660	66	1 000
Imports	430	36			770	64	1 200
Total	770	35			1 430	65	2 200
LAIA							
Exports	1 278	17	451	6	5 901	77	7 630
Imports	1 487	37	427	11	2 060	52	3 974
Total	2 765	24	878	8	7 961	68	11 604

Sources: Argentina: Brazil, Ecuador and Peru, Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI), *La Marina Mercante Iberoamericana* 1987, Buenos Aires, 1987; Chile: Dirección General del Territorio Marítimo y Marina Mercante, *Boletín Estadístico Anual* 1986, Valparaíso, 1986; Mexico: Unpublished figures courtesy of the Dirección General de la Marina Mercante (totals only).

^a Author's estimates.

The magnitude of total freights in table 15 is worth noting: US\$7 350 million in exports and US\$4 236 million in imports during 1983. In 1981, when imports (the sector with the highest freight rates) by sea were much higher, the total reached the unprecedented figure of US\$13 384 million. In 1983, national shipping companies earned only 17% of export and 30% of import freights in their own vessels, for 22% of the total, while earnings from chartered vessels were 5% of export and 14% of import freights, for 8% of the total. Foreign merchant vessels thus earned 70% of the freights generated by foreign trade shipping. If these figures are compared with those for 1970, the freights earned by shipping companies belonging to the LAIA countries rose from US\$496 million in total to US\$3 471 million (from 16% to 30%). The magnitude of these figures clearly indicates that there is considerable scope for increasing the share of foreign trade freights which fleets of the region can and should earn.

d) *Shipping conferences in Latin America and the Caribbean*

Table 16 lists the liner conferences serving Latin America and the Caribbean. There are 52 conferences with a total of 492 members, 195 of which are from the region (40%) and the remainder foreign. The majority (29) operate on the Atlantic coast of South America, with 261 affiliated companies of which 147 are Latin American (51%). There are eight conferences in Mexico and Central America with a total of 57 members, but only nine of these are regional (16%). The Caribbean has 10 conferences with 93 members, 18 of which are from that area (19%). The Pacific coast of South America is served by only seven conferences, with 21 regional lines (40%). Only five serve strictly intraregional traffic: the Inter-American Freight Conference-Puerto Rico and Virgin Islands Area (C-5), the Brazil/Mexico/Brazil Tariff and Services Agreement (AS-6), the Argentina-Brazil Maritime Freight Conference (AS-7), the Inter-American Freight Conference, River Plate/Puerto Rico and U.S. Virgin Islands/River Plate Conference, and the River Plate/Caribbean/River Plate Conference (AS-22). Of the 29 conferences serving the Atlantic coast of South America, 21 have their secretariats either exclusively in the region or both within the region and outside it; in the case of all other conferences, however, only one (C-5) has a secretariat in the region.

Table 17 gives information on Latin American and Caribbean shipping companies affiliated with the different conferences, while table 18 lists the 14 regular shipping lines not affiliated with any conference.

21. Problems of maritime transport

Many problems affect shipping in general in Latin America and the Caribbean. Although a number of them also occur in the industrialized countries, most arise because this is a developing region. Some of these difficulties are inherent in traditional structures such as cargo imbalances and instability in certain traffics, but others are caused by institutional faults whose solution depends on the will to act of the countries involved. Among the latter are the excessive paperwork and red tape that burden merchant vessels, and consular intervention in trade and transport that slows down port operations and makes them more expensive, thereby delaying international traffic and increasing costs.

a) *Imbalances in the volume and types of cargo*

In general, exports from LAIA countries are over four times the tonnage of their imports, with the further complication that the composition of cargo groups also varies considerably. As has been said, exports

Table 16

**SHIPPING CONFERENCES AND PARTICIPATION BY NATIONAL
SHIPPING COMPANIES OF THE LATIN AMERICA
AND CARRIBBEAN REGION**

Ref. No.	Name of conference	Head office	Number of members		
			Total	Region	Foreign
I. Mexico and Central America					
M-1	Atlantic & Gulf/Panama Freight Association	New York	4	-	4
M-2	Conferenza Centroamerica (CONCA)	Genoa-Marseilles	10	2	8
M-3	Conference Mercis Messico (CMM)	Genoa-Marseilles	6	1	5
M-5	Ensenada/Japan Freight Conference	Tokyo	7	1	6
M-6	Hong-Kong/Panama Freight Conference	Hong-Kong	3	-	3
M-7	Japan-Latin America Eastbound Freight Conference	Tokyo	11	3	8
M-8	Japan-Mexico Freight Conference	Tokyo	9	2	7
M-9	Korea-Mexico Freight Agreement	Tokyo	7	-	7
Total Mexico & Central America			57	9	48
II. Caribbean					
C-1	Association of West India Trans-Atlantic Steamship Lines (WITASS)	Surrey	32	6	26
C-2	Conferencia España-Caribe-Centroamerica	Madrid	10	2	8
C-3	Conference de Fret France/Antilles et Guyane Francoise	Paris	3	-	3
C-4	Eastern Canada-Caribbean Freight Association	Montreal	5	1	4
C-4a	Florida/Caribbean Liner Association	Ft. Lauderdale	11	-	11
C-5	Inter-American Freight Conference: Pto.Rico & Virgin Islands Area	Rio de Janeiro	11	8	3
C5a	Japan-Puerto Rico-Virgin Islands Freight Conference	Tokyo	5	-	5
C-6	Korea-Latin America Freight Agreement ^a	Tokyo	9	-	9
C-7	U.S. Atlantic & Gulf-Jamaica and Hispaniola Steamship Freight Association	New York	4	-	4
C-8	U.S. Atlantic & Gulf-Southeastern Caribbean Conference	New York	3	1	2
Total Caribbean			93	18	75

Table 16 (continued)

Ref. No.	Name of conference	Head office	Number of members		
			Total	Region	Foreign
III. <i>Pacific South America</i>					
PS-2	Atlantic & Gulf/West Coast of South America Conference	New York	6	4	2
PS-3	European/South Pacific & Magellan Conference (ESPM)	Surrey	16	6	10
PS-3a	Japan/West Coast of South America Freight Conference	Tokyo	14	7	7
PS-3b	Italy, France (Mediterranean), Spain/Colombia Pacific Conference (MEPACOL)	Genoa	6	1	5
PS-4	Korea-West Coast of South America Freight Agreement	Tokyo	6	-	6
PS-5	US. Atlantic & Gulf/Ecuador Freight Conference	New York	3	2	1
PS-6	US. Florida/Ecuador Steamship Conference	Miami	2	1	1
Total Pacific South America			53	21	32
IV. <i>Atlantic South America</i>					
AS-1	Argentina/Mediterranean/Argentina Freight Conference (AR/M/AR)	Buenos Aires Genoa	12	3	9
AS-2	Brazil/Europe/Brazil Freight Conference	London- Rio de Janeiro	24	4	20
AS-3	Brazil/Far East/Brazil Freight Conference	Rio de Janeiro- Tokyo	7	4	3
AS-4	Brazil/Mediterranean/Brazil Freight Conference	Rio de Janeiro- Genoa	12	3	9
AS-4a	Brazil/Nigeria/Brazil Freight Conference	Rio de Janeiro- Lagos	6	2	4
AS-5	Brazil/Southeast Africa/ Brazil Tariff Rate Agreement	Rio de Janeiro- Durban	7	3	4
AS-6	Brazil/Mexico/Brazil Tariff Services Agreement ^b	Rio de Janeiro- Mexico	4	4	-
AS-7	Conferencia Marítima de Fletes Argentina-Brazil	Rio de Janeiro- Buenos Aires	38	38	-
AS-8	East Coast Colombia Conference	New York	4	1	3
AS-9	Europe/Argentina Freight Conf. and Argentina/Europe Freight Conf.	London- Buenos Aires	25	5	20
AS-9a	Europe/Argentina Freight Conf., Section 4-United Kingdom and Eire Area	London	6	2	4
AS-10	Far East/River Plate/Far East Freight Conference	Buenos Aires- Singapore- Tokyo- Hong-Kong	7	4	3
AS-10a	Gentlemen's Agreement Cabedelo/Natal	Rio de Janeiro- Bremen	12	2	10
AS-10b	Hong Kong/Venezuela Rate Agreement	Hong Kong	3	-	3

Table 16 (concluded)

Ref. No.	Name of conference	Head office	Number of members		
			Total	Region	Foreign
AS-11	Inter-American Freight Conf.: Canadian Area-Sect. A & D.	Montreal	6	6	-
AS-12	Inter-American Freight Conf.: Canadian Area-Section B.	Buenos Aires	5	5	-
AS-13	Inter-American Freight Conf.: Canadian Area-Section C.	Rio de Janeiro	7	6	1
AS-13a	Inter-American Freight Conference: Pacific Coast Area	San Francisco- Buenos Aires	3	2	1
AS-14	Inter-American Freight Conference: US. Area Agreement-Section A.	New York	10	6	4
AS-15	Inter-American Freight Conf.: US. Area Agreement-Section B.	Buenos Aires	13	8	5
AS-16	Inter-American Freight Conf.: US. Area Agreement-Section C.	Rio de Janeiro New York	17	9	8
AS-17	Inter-American Freight Conf.: US. Area Agreement-Section D.	New York	8	5	3
AS-18	Inter-American Freight Conf.: River Plate/Puerto Rico and US. Virgin Islands/River Plate Area ^c	Buenos Aires	7	6	1
AS-19	Mediterranean/Uruguay/ Mediterranean Freight Conference	Genoa	12	4	8
AS-20	North of Brazil & Amazonia/ Europe/North of Brazil	Rio de Janeiro- Bremen	12	3	9
AS-22	River Plate/Caribbean/ River Plate Conference	Buenos Aires	7	6	1
AS-23	River Plate/South & East Africa/ River Plate Freight Agreement	Buenos Aires- Durban	8	4	4
AS-24	US. Atlantic & Gulf/Venezuela Conference	New York	2	1	1
AS-25	UK. & Eire/Uruguay/Freight Conference	London	5	1	4
Total Atlantic South America			289	147	142

Summary by geographical area

Area	Number of confer- ences	Number of members			Percent- age region
		Total	Region	Foreign	
I. Mexico & Central America	8	57	9	48	16
II. Caribbean	10	93	18	75	19
III. Pacific South America	7	53	21	32	40
IV. Atlantic South America	29	289	147	142	51
Total Latin America & Caribbean	54	492	195	297	40

Source: Croner Publications, Ltd., *World Directory of Freight Conferences*, through February 1987.

^a Also corresponds to Mexico, Central America and ports in Northern South America.

^b Also corresponds to Mexico and Central America.

^c Also corresponds to the Caribbean.

Table 17

LATIN AMERICAN AND CARIBBEAN NATIONAL SHIPPING COMPANIES AFFILIATED WITH LINER CONFERENCES

(Reference numbers from table 16)

ARGENTINA

Empresa Líneas Marítimas Argentinas	M-9, C-4, PS-1, AS-1, AS-2, AS-3, AS-4, AS-5, AS-7, AS-9, AS-10, AS-11, AS-12, AS-13, AS-14, AS-15, AS-16, AS-17, AS-18, AS-19, AS-22, AS-23
Alianza Naviera Argentina	AS-7
AREMAR	AS-7
ARPEZ S.A. de Navegación	AS-7
ASTRAMAR	AS-7
A. Bottachi S.A. de Navegación	AS-5, AS-7, AS-11, AS-12, AS-13, AS-14, AS-15, AS-16, AS-17, AS-18, AS-22
Cia. Argentina de Navegación Intercontinental	AS-3, AS-5, AS-6, AS-7, AS-10, AS-23
Cia. Naviera Paraná	AS-7
CIAMAR (Cia. Argentina de Transporte Marítimo)	AS-2, AS-7, AS-9, AS-19
Cormoran S.A. de Navegación	AS-7
Del Bene, S.A. de Navegación	AS-7
Ferry Líneas Argentinas	AS-7
Flota Argentina Mineralera	AS-7
J.C. Schenone, Empresa de Transporte	AS-7
La Naviera, Línea Argentina de Navegación	AS-7
Marifran, S.A.C.M.	AS-7
Maruba, S.A.C.M.	AS-7
Navieras Argentinas	AS-7
Toba S.A.	AS-7
Ultraocean S.A.	AS-7

BOLIVIA

Líneas Navieras Bolivianas (LINABOL)	PS-3a, PS-6
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BRASIL

Brasilmar Navegacao S.A.	AS-7
Lloyd Brasileiro	M-9, C-4, AS-1, AS-2, AS-3, AS-4, AS-4a, AS-5, AS-6, AS-6a, AS-7, AS-9, AS-10, AS-10a, AS-11, AS-12, AS-13, AS-14, AS-15, AS-16, AS-17, AS-18, AS-19, AS-20, AS-22, AS-23,

Table 17 (continued)

Cia. Marítima Nacional	C-4, AS-6, AS-14, AS-15, AS-16, AS-17, AS-18, AS-22
Cia. de Navegação Norsul	AS-7
Cia. Paulista de Comercio Marítimo	AS-1, AS-4, AS-19
Cia. Siderúrgica Nacional	AS-7
CONAN - Cia de Navegação do Norte	AS-7
Empresa de Navegação Aliança S.A.	AS-2, AS-5, AS-6a, AS-7, AS-9, AS10a, AS-11, AS-12, AS-13, AS-15, AS-16, AS-20
Frota Amazônica S.A.	AS-5, AS-6, AS-6a, AS-11 AS-13, AS-14, AS-16, AS-20
Frota Oceânica Brasileira	AS-3, AS-5, AS-10, AS-23
Fullmar Transportes Fluviais e Marítimos	AS-7
Global Transporte Oceânico S.A.	AS-4a, AS-7
H. Dantas Comercio, Navegação e Industria	AS-7
Hipermodal S.A. Transportes e Navegação	AS-7
LIBRA - Linhas Brasileiras de Navegação	AS-7
NASA - Navegação Atlântico Sul S.A.	AS-7
Navegacao Mansur Ltda.	AS-7
NAVEGO - Navegação Antonio Gomes	AS-7
NETUMAR, Cia, de Navegação Marítima	AS-5, AS-11, AS-12, AS-13, AS-14, AS-15, AS-16, AS-17
PETROBRAS	AS-7
Transroll Navegação S.A.	AS-7
Tupinave S.A.	AS-7
CHILE	
Cia. Chilena de Navegación	
Interoceánica (CCNI)	PS-2, PS-3a, PS-6
Cia. Sudamericana de Vapores (CSAV)	PS-1, PS-2, PS-3, PS-3a, PS-6
Empresa Marítima del Estado (EMPREMAR)	PS-3
COLOMBIA	
Flota Mercante Grancolombiana	C-1, C-2, PS-1, PS-2, PS-3a, PS-3b, PS-6, M-2, M-7, M-8, M-9, AS-8
ECUADOR	
Ecuadorian Line, Inc.	PS-4, PS-5 PS-6
Galapagos Line	M-9
Transportes Navieros, Ecuatorianos (TRANNAVE)	PS-1, PS-2, PS-3, PS-3a, PS-4, PS-6
GUATEMALA	
Líneas Marítimas de Guatemala	C-1

Table 17 (concluded)

MEXICO	
Línea Mexicana del Pacífico	C-1 (associate member)
Transportación Marítima Mexicana (TMM)	M-3, M-5, M-7, M-8, C-1, AS-5 AS-6, AS-14, AS-15, AS-16, AS-17, AS-18, AS-22
NICARAGUA	
Naviera Nicaragüense C.A. (NANICA)	C-1
PARAGUAY	
Flota Mercante del Estado (FLOMERES)	AS-9, AS-16
PERU	
Cia. Peruana de Vapores (CPV)	PS-2, PS-3, PS-3a, PS-6
Consorcio Naviero Peruano (CNP)	PS-3
Naviera Amazónica Peruana	AS-14
URUGUAY	
Cylanco S.A.	AS-14, AS-15, AS-17
Montemar S.A. Comercial y Marítima	AS-25
VENEZUELA	
Cia. Anónima Venezolana de Navegación (CAVN)	C-1, C-2, M-2, M-7, AS-18, AS-24, PS-3a
Vencaribe C.A.	AS-22

Source: Croner Publications, Ltd., *World Directory of Freight Conferences*, through March 1987.

by sea from these countries rose from 304 million t in 1970 to 342 million t in 1983, while imports over the same period rose only from 59 million t to 90 million t. Two thirds of total exports are generally composed of solid bulk, except in the case of Venezuela, where oil is higher. Over one half of imports are composed of liquid bulk (oil and derivatives) and one quarter of solid bulk, except in Venezuela. Therefore, a permanent imbalance in cargoes exists with regard to liquid fuels on the one hand and solid bulk on the other, resulting in the underuse of space on at least one leg of a voyage. Over the long term, this has an adverse effect on transport costs, and makes it difficult to harmonize and coordinate shipping.

b) *Instability of some traffics*

Cargo imbalance often goes hand in hand with traffic instability, which is caused by reliance on external markets that developing countries are not in a position to control, by natural variations in domestic produc-

Table 18

NONCONFERENCE LINES OF LATIN AMERICA AND THE CARIBBEAN

<i>Line</i>	<i>Number of ships</i>	<i>Traffic served</i>
BRASIL		
Global Transporte Oceánico	4	East Africa
COLOMBIA		
Líneas AGROMAR S.A.	5	Gulf of Mexico, South America
Marítimas Internacionales	1	Caribbean
CUBA		
Empresa de Navegación Mambisa	56	U.S. Atlantic Coast, Canada, Europe, Baltic, Mediterranean, Black Sea, Northern South America, Argentina
ECUADOR		
Naviera Interamericana (NAVICANA)	2	West Coasts South America & U.S.
PARAGUAY		
Cia. Paraguaya de Nav. de Ultramar	1	Europe
Empresa de Navegación Fluvial y Marítima (FLUMAR)	4	Brazil, Europe, U.S.
PERU		
Empresa Naviera Santa (SANTAMAR)	2	Europe
Naviera Humboldt S.A.	7	Europe
Naviera Nepruno S.A.	2	U.S. Atlantic & Gulf Coasts
DOMINICAN REPUBLIC		
Martínez y Cia.S.A.	1	U.S. Atlantic Coast
URUGUAY		
Naviera Nobleza S.A.	2	Atlantic Coast South American
VENEZUELA		
Consorcio Naviero de Occidente S.A.	1	Caribbean
Naviera Lavinel S.A.	2	Canada

Sources: Instituto de Estudios de la Marina Mercante Iberoamericana (IEMMI), *La Marina Mercante Iberoamericana*, 1987, Buenos Aires, 1987; and Croner Publications, Ltd., *World Directory of Freight Conferences*, through March 1987.

tion, or by government decisions beyond the control of shipping companies. The classic example of the first case is the export trade of bananas from Ecuador to Japan, which declined sharply when Japanese-owned plantations in the Philippines went into production, dropping from 455 000 t in 1972 to one half of that figure the following year and finally disappearing altogether in 1978. The second case occurs in Chile with imports of wheat, which have fluctuated between 1.2 million t in 1974, 705 000 t in 1977, one million t in 1981, and 937 000 t in 1984. The third situation often occurs as a result of liberalization or restriction of vehicle imports.

c) *Rising tendency of conference rates*

As has been pointed out, Latin American countries have repeatedly expressed their concern in different international forums over the constant increases in shipping conference rates and the adverse consequences of the rate structure, especially due to the practice of establishing a single rate for a range of ports over several countries. This system is unfair for ports that have invested large sums to improve their infrastructure or have made an effort to overcome institutional problems. The conferences are quick to establish surcharges for port congestion, but they do not give discounts or bonuses on rates when a port shows a marked increase in its productivity.

d) *Port deficiencies*

Port deficiencies may be material or physical in nature, or they may be institutional. As noted in chapter 6, among the former are lack of berth space, shallowness or silting, lack of suitable cargo-handling equipment, lack of space for container manipulation and storage, and congestion caused by lack of land access to maritime terminals. The solution to these material problems requires time and resources. It should be remembered that most Latin American ports are public, and thus depend on tax revenues for investments in infrastructure and equipment. However, port authorities in the region have responded energetically to this challenge, markedly improving terminals in the last quarter century so they can meet the demands of modern transport technologies such as the use of containers and vessels specializing in unitized transport.

Problems of an institutional nature include obsolete and inadequate legislation for dealing with unitized cargo, different hours of work for different sectors, excess paperwork and formalities that slow down port operations and Customs procedures and make them more expensive, and labour problems such as inefficiency, work stoppages, strikes, slow-downs, etc. In some ports in the region, this situation is aggravated by obsolete practices for receiving vessels, lack of administrative flexibility in solving emergency situations and, in some cases, disorganization, labour undiscipline and even robberies and theft in port areas. Another factor is the level and structure of port fees, established with an eye to profit without considering that a port is not a profit-seeking commercial company but a cargo transfer station at the service of vessels and goods.

e) *Excess paperwork and red tape*

Another serious problem that affects shipping in various countries in the region is excess paperwork and red tape for vessels and their cargoes. Documentary requirements help to increase shipping costs unnecessarily and to delay the dispatch of vessels and their cargoes. At

the same time, they constitute an unnecessary work load which causes inconvenience and loss of time for the port, Customs, health and other authorities that demand these forms, check them, send them on to another branch or simply file them as being of no further use. One proof how futile many of these requirements are is the fact that airport authorities —whose functions are similar to those of port authorities— require considerably fewer documents for the reception of aircraft and their cargoes. Also, over the last quarter of the century, industrialized nations without exception have eliminated most of the formalities they once required for vessels in port.

Among all the unnecessary demands on shipping, the one causing perhaps the greatest inconvenience, delay and increase in costs is consular intervention in the dispatch of vessels and the import of goods. This practice is a relic of medieval times, when each maritime expedition was a true adventure with the risk of real or fictitious loss of cargo that made it necessary for the consul of the importing country to board an incoming vessel and check its cargo *de visu*. Today, the consular visa represents a useless and burdensome bureaucratic procedure, since it is usually impractical and in many cases physically impossible for consular agents to actually verify the goods themselves. They are thus certifying a fact they do not know —and that would be impossible, if not absurd, for them to know— for which they generally charge a great deal in addition to delaying the dispatch of ship and cargo. In traffic between neighbouring countries, it often happens that consular documents fail to arrive before the ship, which must then wait for them before it can begin unloading, with the consequent unnecessary increase in transport costs.

Over the last three decades, international, intergovernmental and private agencies including the OAS, ECLAC, the General Agreement on Trade and Tariffs (GATT), IMO, the International Civil Aviation Organization (ICAO), and LAIA, as well as the International Chamber of Commerce, the International Chamber of Shipping, and the Baltic and International Maritime Council, have conducted an active campaign to solve these problems. This international action has led to the elimination of many formalities related to trade in general and to air transport, but there is still much to be done with regard to water transport. The industrialized nations have completely done away with consular visas for all trade and transport. While the Latin American countries have almost completely abolished visa requirements for aircraft and air freight, they still apply them to vessels and sea-borne trade, with the exception of Argentina, Brazil, Chile and Venezuela.

With regard to consular formalities for the commercial invoice, the only six countries in the world that continue to apply them are Bolivia, the Dominican Republic, Haiti, Honduras, Panama and Uruguay. But doing away with this formality does not solve the problems affecting

transport when consular visas for cargo manifests and bills of lading are not eliminated at the same time. The argument that this form of consular intervention is indispensable in order to control the application of cargo reserve legislation is invalid. The Latin American countries that maintain this protectionist measure —with the exception of Colombia, Ecuador and Peru— have not needed recourse to their consular agents to ensure that the legislation is applied. Central bank stamps on import and export licenses and checks by Customs officials on this requirement are sufficient.

22. World prospects

As was mentioned in chapter 3 on factors affecting the shipping business, international shipping is basically an activity of chance in which a number of external factors intervene. It is also subject to strong seasonal fluctuations, and to economic cycles with relatively short periods of boom for freight rates and shipbuilding, followed by longer periods of recession with low rates and a large number of idle vessels, but with shipyards still producing thanks to state subsidies.

In recent years, international trade —and hence shipping— have experienced the worst depression since 1929-1930, as well as an extraordinary structural change, especially due to changes in the energy sector, industrialization of the Third World, and excess floating tonnage. New transport technologies such as the container and its logical consequence, multimodal transport; the advent of large cellular container ships; the updating of ports to meet new requirements; the increased use of land bridges; and recent round-the-world shipping services, have all had an impact on this situation. Each of these processes reduces the cost of transport at the expense of large investments.

To minimize increases in transport operating costs and to withstand variations in traffic flows, new structures have been introduced into maritime transport. The main feature has been a trend towards larger and more specialized vessels, which in turn has had a great impact on the demand for port facilities. The increase in the size of vessels —especially tankers and bulk carriers— has made it necessary to deepen berths and port-access canals, and even to change the location of maritime terminals. The increased use of specialized carriers has had a direct effect on port installations and especially on cargo-handling techniques, which have made it possible to substantially reduce the length and cost of port stays, as well as labour costs.

Containerization has led to a reduction in the number of calls made by vessels serving international traffic, especially large container ships on round-the-world services. This system has led to the creation of feeder

services to fulfill the needs of ports with smaller traffic volumes, leaving them in a subsidiary position with respect to the main shipping routes.

Institutionally, the world situation is characterized by a dichotomy between the protectionist shipping policies of developing countries and the supposed freedom of the seas preached by the maritime powers. The different positions can be summed up as follows:

Third World countries: They try to promote their merchant marines by protection and development measures such as cargo reserve legislation and state-owned fleets.

Industrialized countries: They attempt to maximize their power in international shipping through technological progress and the defence of free-market principles despite the subsidies and other types of aid they give their merchant marines and shipbuilding industries.

Socialist bloc countries: They expand their fleets so as to ensure the independence of their shipping and to obtain foreign currency in trade with third countries, placing national interests before the commercial factors of the shipping industry.

It can be said that the world recession—which is only now coming to an end—has helped sharpen competition among the world's merchant fleets. Thus, while the volume of cargo in international traffic has shrunk and rates have dropped, excess tonnage has been produced despite the fact that there are millions of tons idle. In turn, the great powers have intensified their support for their domestic shipping companies through a wide variety of direct assistance or through economic support for shipyards, while developing countries try to increase their shipping potential by augmenting their state-owned fleets and by imposing cargo reserve legislation for their vessels.

A recent study by the Nippon Yusen Kaisha Research Chamber noted that trade cycles are a historical fact, and that the current stage of recovery will be followed sooner or later by a depression. The slow pace of growth in the demand for raw materials for steel and energy indicates that the increase in shipping in the coming years will not live up to general expectations. If new orders for construction are placed on speculation, failing to recognize this crucial trend, shipping companies will face continuous financial difficulties because conditions exist for a structural tendency to overtonnaging.⁴¹

However, Professor Arnljot Stromme Svendsen, Director of the Norwegian School of Business Economics and Administration of Bergen, in a recent conference entitled "International Transport on the Threshold of Recovery or Recession?" has said: "The survival of the fittest often means the survival of people and businesses which change their strategies and policies before it is too late. Therefore, it is very important to recognize the difference between cyclical and structural problems and difficulties in labour conditions in shipping. Cyclical

problems are transitory, while structural problems have a more lasting impact. No one can say today whether the shipping industry is on the edge of a new and harsh crisis or on the threshold of a period of growth and prosperity. One of the few major economists who has made a frank forecast of the world economy is Professor Lawrence Klein of the United States who won the Nobel Prize for Economics in 1981. He believes that we are at the beginning of a long period of growth and that the United States will be the driving force for development. World trade will expand more quickly than the gross national product or the manufacturing industry; and therefore if production next year were to grow by from 2-3%, world trade would grow by at least 4%. We hope that Klein's forecast is moderately optimistic and is outstripped by real development. In any case, it is the time for new ideas, for daring and non-traditional shipping projects in the fields of administration, technology, financing methods, etc. But the new ideas must not be too risky. The shipping industry is in a crucible. It is absolutely not recommendable to return to the beginning of the 1970s or to old habits. New paths must be found so that the shipping industry will not stagnate."⁴²

Notes

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First edition

Printed in United Nations — Santiago, Chile — 87-7-929 — September 1987 — 1348

ISSN 0252-2195 — ISBN 92-1-121137-9 — E.86.II.G.11 — 00400P